

Editorial: Breaking the Debilitating Medico-Legal Crisis Cycle

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Singapore Journal of Obstetrics and Gynaecology (SJOG) is now in the 46th year issue since March 1970.¹ Besides promoting academic collaboration and providing our young Obstetrics and Gynaecology (O&G) specialist trainees with timely opportunity to publish their academic endeavours², SJOG is the academic voice of the Obstetrical & Gynaecological Society of Singapore (OGSS), raising relevant issues and tackling pertinent challenges that OGSS and our medical fraternity face.

One such pertinent issue is O&G medical litigation. Advances in technology have changed and are still changing our practice in O&G.³ This is concomitant with the rising expectations of patients and the public in the quality and standards of our health care system. However these expectations can be overtly high and unrealistic to the point of being detrimental to the optimal functioning of the healthcare system. The situation is aggravated by the unfortunate adversarial system that pits doctors against patients in the courts. Multi-million-dollar claims and medico-legal payouts are common worldwide. This has led to the growing crisis of very high medico-legal risks worldwide. This in turn adversely affects medical care in several ways, including the spectre of pervasive defensive medicine, debilitating medical liability insurance premiums and the heavy burden of high healthcare financing & costs for the community,⁴ which further fuel the adversarial situation.

Singapore has achieved much in healthcare despite the limitations of manpower, logistics and state funding faced by all healthcare systems. Our system is one of the best in the world in terms of cost and effective delivery.⁵ We have also adopted and adapted best practices from many parts of the world. Some O&G examples include the patient safety program and the more structured methodologies of World Health Organization (WHO)⁶, healthcare quality framework from Joint Commission International (JCI)⁷, and the residency training framework from Accreditation Council of Graduate Medical Education - International

(ACGME-I)⁸. It is clear that before adopting them, we need to check the relevance and appropriateness. It is also clear that while adapting them, we need to continue to do a lot of fine-tuning to the local situation for it to function well.

However one thing is clear that we should not adopt; and that is the American system of health care financing and medico-legal system. The editor (KH) went to Harvard University, Boston in 2012 for a healthcare leadership course, where in a lecture on the American healthcare financing system and related medico-legal issues, the eminently learned professor rightfully prefaced his lecture with a cautionary note to the course participants, especially foreigners, that they should view that system as a negative example and that no one should follow or adopt this. Instead, the lessons to learn were on how not to follow and how to avoid its pitfalls.

Even if there is no apparent model to follow or emulate, we need to be able take our own initiative and mount leadership resolve to solve this looming crisis. The answers and approaches to an even higher standard of O&G or medical care in Singapore are not through increased litigation or courtroom arguments and judgments but in the optimal use of localized O&G/medical guidelines and protocols, audit, safety reviews, clinical governance, research, teaching, benchmarking and continuing medical education within our healthcare system. Capping high payouts, no-fault compensation and mediation are some of the strategies that have been considered to avert the medical litigation crisis.

It is thus refreshing to have Chief Justice Sundaresh Menon as our OGSS Annual Orator 2014 on the pertinent topic of 'Evolving Paradigms for Medical Litigation in Singapore'⁹ on 28 October 2014. In his oration, he skillfully discussed the merits of the enhanced use of mediation; the need for a more inquisitorial and less adversarial approach; and the use of medical assessors in recognition of the limitations of judges who have to

make judgments in medical cases (often fraught with issues that are controversial even to medical doctors). OGSS hopes that these suggested actions may have the seeds that can help revert the vicious cycles of overburdening medical liability & litigation to that of a virtuous cycle. The suggestions of the Chief Justice should be seriously considered and supported.

The tasks of nursing our medical liability system to optimal health, cannot be resolved by O&G or medical doctors solely. It will involve many parties. They include government, legislators, lawyers, insurance managers,

doctors, nurses, allied health staff, patients, and the public acting in unison. We should continually address all these issues to optimize our healthcare resources and provide excellent & cost effective healthcare. We need to work hand in hand with all the stakeholders. The onus is upon us to make sure that our healthcare and legal systems can work, and will work together.

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Citation for The Honourable Chief Justice Sundaresh Menon at the Annual Oration of the Obstetrical & Gynaecological Society of Singapore

28th October 2014, Raffles Hotel, Singapore

Chua N

Dear Colleagues and Friends of the O&G Society of Singapore, I will now deliver the citation for The Honourable Chief Justice Sundaresh Menon

Chief Justice Menon graduated with Bachelor of Laws with First Class Honours from the National University of Singapore in 1986 and later obtained a Master of Laws degree from Harvard Law School in 1991. He was admitted as an advocate and solicitor of the Supreme Court of Singapore in 1987 and as an Attorney and Counsellor-at-law of the Bar of the State of New York in 1992.

He began his legal career in the law firm of Shook, Lin & Bok in 1987 and went on to join the law firms of Wong Parrtnership, Rajah & Tann and Jones Day.

From April 2006 to March 2007, Chief Justice Menon served as a Judicial Commissioner of the Supreme Court and presided over several prominent criminal and civil cases in the High Court.

After completing his term on the Bench, he returned to Rajah & Tann and became a Managing Partner in August 2009. As a private practitioner, Chief Justice Menon was recognised as one of the leading lawyers in the fields of commercial litigation and arbitration, insolvency and construction law, in Singapore and abroad. He advised and represented numerous local and overseas clients in complex and technical disputes and appeared before as well as in arbitration tribunals in various jurisdictions. In 2006, Chambers Global, the leading international guide to lawyers, named him among the top 40 international arbitration lawyers in the world.

Chief Justice Menon has also served as the Deputy Chairman of the Singapore International Arbitration Centre and has represented Singapore at the UNCITRAL (United Nations Commission on International Trade Law) Working Group on Arbitration.

Chief Justice Menon was appointed Senior Counsel in January 2008. On 1st October 2010, he was further appointed as the Attorney-General of Singapore. During this time, he oversaw the implementation of the Criminal Procedure Code 2010 which made sweeping changes to the criminal case process. Mr Menon relinquished his position as the Attorney-General on 24 June 2012 and was appointed as a Judge of Appeal of the Supreme Court on 1 August 2012. On 6 November 2012, Mr Menon was sworn in as the Chief Justice of Singapore, which is the 4th Chief Justice of Singapore. He is the first non-Chinese Chief Justice of the Republic of Singapore and also the first Singaporean-born to serve as Chief Justice.

Currently, Chief Justice Menon is also the President of the Senate of the Singapore Academy of Law, the Chairman of the Advisory Board for the Law Faculty of the Singapore Management University, President of the Legal Service Commission and Chairman of the Presidential Council for Minority Rights.

Ladies & Gentlemen, Please welcome The Honorable Chief Justice Sundaresh Menon to deliver this years Annual OGSS Oration entitled : EVOLVING PARADIGMS FOR MEDICAL LITIGATION IN SINGAPORE.

Natalie Chua
Council Member OGSS

Evolving Paradigms for Medical Litigation in Singapore

Annual Oration of the Obstetrical & Gynaecological Society of Singapore

28th October 2014, Raffles Hotel, Singapore



Chief Justice Sundaresh Menon

At the risk of overgeneralising, it may be said that it is not a happy occasion when judges and lawyers get involved in matters of medicine. Doctors are called to heal. Theirs is the domain of saving, mending and in the case of obstetricians – to bring newborns into this world. This is the stuff of hope and purpose. But then tragedy strikes. A patient might sustain some injury, or yet more tragically pass away. The courts and lawyers get involved. The doctor might find himself faced with the unpleasantness and trauma of being sued or called to account before the profession's disciplinary authorities; and having his competency, even integrity questioned. Much as we all wish that such situations never arise, errors and mishaps will occur. Unfortunately, these are the cases that eventually find their way to the courts where my colleagues and I sit.

My address today focuses on one aspect of the interaction between medicine and the law, namely, when a patient sues a doctor for what might broadly be called medical malpractice. First I shall outline the foundations of the law on medical malpractice. Next I shall explore the ways in which the practice of medicine can potentially be affected by the medical profession's consciousness of the risk of malpractice liability. I have in mind such phenomena as high insurance costs and the reported practice of "defensive medicine". Finally I consider how these effects might be mitigated if we were to re-imagine our medical litigation paradigm.

The history of liability for medical malpractice

In modern times, medical malpractice primarily involves a branch of the law known as the law of negligence. In ordinary usage, "negligence" is simply a synonym for carelessness. But legally, a person is not obliged to compensate another just because he has been careless. Rather, he is so obliged only when three broad requirements are met. First, he must owe the other person a duty to take care. Second, he must have breached that duty by failing to exercise the standard of care that is

required and imposed by the law. Third and finally, the other person must have suffered some kind of injury or damage as a result of the breach of that duty.¹

The law of negligence is generally regarded as having been established as a coherent and principled body of law only in 1932, although the basic concepts and ideas that underlie it were probably in place a century or more before that.² The notion of medical malpractice however pre-dates the law of negligence. From "ancient times", the medical practitioner has been held to account for failing to exercise reasonable care in treating a patient. The reason for this was that medical practitioners exercised what is called a "common calling"³ and held themselves out to the community as having the required skill and competence to perform it. It was in the community's interests that such persons should follow that calling with adequate care and skill, and they could therefore be sued if they did not meet the standard imposed by the law.⁴

Thus, the obligation of doctors to practise medicine with reasonable care and skill is not new, except that this is now situated within the framework of the law of negligence. And so, whether a medical malpractice suit succeeds or fails depends on whether the claimant patient can establish the three broad ingredients I mentioned earlier: a duty of care, a failure to meet the required standard of care, and damage being suffered as a result of that failure.

It might be helpful at this point to outline each of these three ingredients.

The ingredients of the tort of negligence

As to the first ingredient, whether a defendant owes a claimant a duty of care will depend on three things.⁵ First, it must have been foreseeable that the claimant would suffer loss were the defendant careless. This threshold is easily crossed in the

context of medical malpractice. Second, there must be sufficient “proximity” between the claimant and the defendant. This signifies a certain directness of dealing or relationship between the parties usually focusing on the prospects of harm or injury being caused to one another as a result. Finally, there must be no considerations of policy that militate against imposing a duty of care. Of these, the “proximity” inquiry is usually the most challenging. However, there are certain categories of relationship which have long been accepted as possessing the required closeness and directness, the doctor-patient relationship being one of these.

The second ingredient is that the defendant must have breached that duty by falling short of the standard of care expected of him. The standard of care is that of the reasonable man; and one falls short of this standard when one does what the reasonable man would not have done, or when one fails to do what the reasonable man would have done. Some of you must be wondering, who this reasonable man might be and how we are to know what he would or would not have done. Truth be told, the reasonable man is a judicial fiction; he is simply the embodiment of a value judgment made by judges about how people should behave in certain circumstances. That value judgment turns on a number of things, for example, the magnitude of harm that could result from the defendant’s actions, the degree of the risk of that harm eventuating, and whether there were any alternative courses of action available to the defendant. It hinges very much on the peculiar facts of the particular case.

The third and final ingredient requires the claimant to have suffered some kind of injury or damage as a result of the defendant’s actions. Embedded within this are at least two sub-requirements. One is that the damage must be of a type that the law recognises and protects. Physical injury to the person and physical damage to property are so protected. Emotional distress, by contrast, is not; although medically-recognised psychiatric harm is. The other sub-requirement is that the defendant’s actions should have caused the damage sustained by the claimant. Thus, if the damage would have occurred anyway regardless of the defendant’s actions, the necessary causal connection will not exist.

This is no more than a broad sketch of how negligence law generally operates, but it will suffice for our present purposes. I now turn to the specific context of medical malpractice.

The modern law on medical malpractice

It is beyond question that a doctor owes a duty to take care to his patient. However, difficulties might arise in ascertaining when the doctor-patient relationship begins. Does it begin only upon a patient’s first face-to-face consultation with the doctor? What if, prior to that, they had spoken on the telephone? These were broadly the facts of a High Court case heard about a decade ago.⁶ There, the judge held that the doctor, an obstetrician and gynaecologist, did not owe his patient any duty of care until she had consulted him at his clinic. The judge said that it would be “onerous and unfair” to medical practitioners if their duty of care “began even before the first consultation, and extended to cover telephone advice and/or opinions sought by callers who may not even become their patients later.”⁷ This aspect of the judge’s decision was later criticised by an academic, who thought that the judge’s views had been stated too widely and categorically.⁸

That is one potential complexity that can arise when considering the duty of care ingredient in medical negligence. Another question that might be of particular interest to some of you in the audience would be whether an obstetrician owes a duty of care to an as-yet unborn child that could give rise to liability after the child is born. This is an interesting question but one which I will have to leave for another day. Leaving these situations to one side, however, it will usually be a straightforward matter for a patient to establish that he was owed a duty of care by the doctor.

The claimant patient must then show that the defendant doctor failed to meet the standard of care prescribed by the law. I have said that in the general law of negligence, the standard of care is that of the reasonable man. In the specific context of medical malpractice, the standard is that of the “ordinary skilled man exercising and professing to have that special skill”⁹ or in other words, a reasonably skilled and competent doctor.

The law has developed a test for determining whether a doctor has met the standard of care and this is referred to as the *Bolam* test because it was first set out in the English case of *Bolam v Friern Hospital Management Committee*. *Bolam* was decided by a single judge after trial; but the *Bolam* test has been endorsed by the highest courts in the UK and Singapore.

It is best to state the *Bolam* test in the actual words used by the judge:¹⁰

[A doctor] is not guilty of negligence if he has acted in accordance with a practice accepted as proper by a responsible body of medical men skilled in that particular art. ... Putting it the other way round, a man is not negligent, if he is acting in accordance with such a practice, merely because there is a body of opinion who would take a contrary view.

As the judge in *Bolam* saw it, the basis for this proposition was the “ample scope for genuine difference of opinion”¹¹ in the realm of medical diagnosis and treatment.

The *Bolam* test thus rests to a significant degree on the acknowledgement that reasonably skilled and competent doctors can legitimately disagree about a course of treatment or even as to how they would interpret or respond to a given set of circumstances. Such disagreement is unsurprising given the limits of what we know. Medical knowledge is not complete; and current diagnostic techniques and technology can only go so far. Furthermore, medical decisions sometimes have to be made under intense time pressure. It might often be reasonable for a doctor to take any of a number of possible courses of action in any given set of circumstances.

The *Bolam* test has had a practical impact on malpractice suits. So long as a defendant doctor is backed by experts who will testify that what he did in the circumstances was sound and proper, he stands a good chance of not being found to have acted negligently. To some, this seems to confer “near-immunity [on] the medical profession from actions in negligence”.¹²

About four decades after *Bolam* came the *Bolitho* case,¹³ which was decided by five judges of the UK House of Lords. In *Bolitho*, the court held that judges are not bound to exonerate a defendant doctor “just because he leads evidence from a number of medical experts who are genuinely of opinion that the defendant’s treatment or diagnosis accorded with sound medical practice”.¹⁴ The experts’ opinion must have “logical basis”¹⁵ and if that opinion is “not capable of withstanding logical analysis”, the judge may hold that it does not pass muster because it is not reasonable or responsible.¹⁶

The decision in *Bolitho* is often thought to have qualified the *Bolam* test. In some respects, it sought to subject defence experts to more judicial scrutiny and

put decision-making power back into judicial hands. However, any shift away from the *Bolam* test that it signified was but a small one. The judges in *Bolitho* were quick to emphasise that “it will very seldom be right for a judge to reach the conclusion that views genuinely held by a competent medical expert are unreasonable.”¹⁷ In the vast majority of cases, they said, “the fact that distinguished experts in the field are of a particular opinion will demonstrate the reasonableness of that opinion.”¹⁸ The seeming tension between *Bolam* and *Bolitho* stems from the desire on the one hand, to recognise the room for reasonable disagreement between doctors, and on the other, to guard against the possibility of doctors escaping liability simply by persuading colleagues to say that what they did was in keeping with acceptable medical practice.

In Singapore, the Court of Appeal has accepted not only the *Bolam* test but also the decision in *Bolitho* in a 2001 case between Dr James Khoo and Mdm Gunapathy.¹⁹

Before I leave this and proceed to the third ingredient of negligence in the context of medical malpractice, I should point out one more thing. It has been said that a doctor’s professional functions may broadly be divided into three phases: diagnosis, advice and treatment.²⁰ To the extent that courts accept that *Bolam* is good law, it is not controversial that it applies during the phases of diagnosis and treatment. But there is some controversy as to whether it also applies during the advice phase. This is the phase where the doctor, having isolated the likely problem, considers with the patient how best it may be addressed. There is an important element of patient autonomy here. Patients generally have the right to refuse treatment and here the law is concerned with whether the patient was given enough information to enable him to come to a decision. The usual complaint is that the doctor failed to warn the patient of the risks of a particular treatment, or otherwise failed to furnish relevant information. If the *Bolam* test were applied, whether the doctor ought to have furnished that information to the patient would depend on the opinion of other doctors. As long as a responsible body of doctors thought that withholding the information was compatible with sound and proper practice, the doctor would not be liable. However, there is an alternative view that where the giving of advice to patients is concerned, the opinion of doctors should not be determinative since it must ultimately contend with the question of patient autonomy. Moreover, the question of how

much information ought to be given seems to be neither beyond the competence of the judicial mind nor scientifically controversial. In any case, this is a contentious issue which has not been settled under our law.

I turn now to the final ingredient which is the element of causation. In medical malpractice cases, a patient usually goes to the doctor with an existing illness or injury. Left unchecked, that illness or injury could increase in severity and even lead eventually to death. Sometimes the patient's condition might have already reached a stage where despite the best efforts of the doctor, nature cannot be prevented from taking its course. In such a situation, even if it turns out that the doctor breached his duty of care, he will not be liable because it was not his breach that caused the eventual injury. An English case from the 1960s illustrates this point.²¹ Three men went to the hospital complaining that they had been vomiting for three hours after drinking tea. The medical officer on duty told the men to go home and call their own doctors. It turned out that that the men had been poisoned by arsenic and one of them later died. The judge held that the medical officer had breached his duty of care. However, he also found that even if the medical officer had fulfilled his duty and admitted the men to hospital, there was little if any chance that the deceased would have been saved. The medical officer's negligence therefore did not cause the man's death and on this basis he was not liable.

It can thus be seen then that the essence of a malpractice claim rests in the assertion that the doctor failed to exercise due skill and care, which failure resulted in harm or injury to the patient. This can take the form of doing something he should not have done; or perhaps failing to do something he should have done. But this is easier said than it is established. Human experience tells us that the easy cases are those at the extremes: either the doctor was so obviously wrong that he should have no regrets in meeting the claim; or the claim is so obviously bad that it is unlikely to be pursued. The hard cases are the ones in the middle. Medicine is rarely straightforward and it is certainly not formulaic. Doctors may reasonably disagree over the correct diagnosis or what the best course of treatment might be.

How then should we strike a balance between the interests of:

(a) the patient who might indeed have a meritorious claim to a remedy;

(b) the doctor who might indeed have done his best in a difficult situation but failed, despite his best efforts to get the desired outcome; and

(c) the public in ensuring that medical behaviour is not distorted by the fear of litigation?

Potential effects of malpractice liability on the medical profession

Let me take the last point first by considering whether there is empirical support for the notion that doctors may end up making decisions and judgments with an eye not just on the patient but also the risk of a lawsuit. The phrase that is often used is "defensive medicine". A practitioner's text for lawyers defines this as "the process of conducting tests or treatment for legal protection rather than medical reasons."²² A judge in the UK House of Lords has defined it as "the practice of doctors advising and undertaking the treatment which they think is legally safe even though they may believe that it is not the best for their patient."²³

The legal system exists as an ameliorative mechanism to redress wrongs and restore balance in society when things have gone wrong. When the law functions as it is intended to, it serves a salutary purpose in raising standards of behaviour. However, the phenomenon of defensive medicine is predicated on doctors wanting to insulate themselves from the possibility of having to face a lawsuit. One can immediately see how this might play out either in an unwillingness to take necessary or at least reasonable risks or in shifting the risk calculus by opting for other risky options that may be less prone to litigation. If indeed this is the case, then the law has ceased to play that salutary role and we should be thinking about why it is so.

There is literature, mainly from the United States, supporting the view that awareness of malpractice liability does affect the behaviour of doctors.²⁴ There, the problem of medical behaviour being influenced by the risk of malpractice liability has been said to be particularly acute in the O&G context.²⁵ This has probably to do with the frequency with which O&G practitioners are sued. In the late 1980s it was estimated that O&G lawsuits represented almost one-tenth of all medical malpractice claims in the United States and nearly half of all indemnity payments;²⁶ and in the years 1990 and 1991, 54% of all medical malpractice claims involved obstetrical care.²⁷ In the latest survey on professional liability conducted in 2012 by the American Congress of Obstetricians and Gynaecologists, 77.3% of slightly over 9,000

respondents from all over the United States reported that they had in the course of their professional lives experienced at least one professional liability claim filed against them.²⁸ The frequency of malpractice claims in turn drives up the cost of medical insurance. In Singapore, according to a book edited by two members of your society Dr Kelvin Tan and Dr Tay Eng Hseon, as at 2003 O&G doctors paid the highest premiums within the medical profession.²⁹ Is there something about the nature of O&G practice such that patients are more likely to sue when things go wrong? As Dr June Tan pointed out in correspondence with me leading up to this address, when patients go for an obstetrics procedure they do so because they are preparing to welcome a new life into their world and not because of illness. Inevitably, the expectations are positive rather than negative. By contrast, in most other areas of medical practice, patients go to their doctors in bad health and expect the worst. So when something does go wrong in the O&G context there is an especially difficult disconnect between the patients' expectations and the reality they must confront and this might increase the impetus to sue in search of a channel to vent their hurt and the disappointment.

The 2012 American survey that I mentioned earlier suggests that the fear of malpractice liability does affect the behaviour of O&G practitioners. Out of the 9,006 respondents, 57.9% reported having made at least one change to their professional practice as a result of that fear and 6.2% of those who reported having made changes to their practice said that they had in fact stopped practising obstetrics altogether.³⁰ This is not a new development. In 1989, the Institute of Medicine of the National Academy of Sciences in the United States released the results of a two-year study investigating the effects of liability on obstetric care and noted that obstetricians and family physicians increasingly reported that they were eliminating the obstetrics portion of their practices.³¹ Potential malpractice liability has also negatively impacted the training of young O&G doctors with residents not being given the opportunity to exercise a level of responsibility appropriate to their stage of training.³² Another undesirable consequence of the fear of malpractice liability is the unwillingness or reluctance to provide care to high-risk patients, according to 27.4% of the 2012 survey respondents who had made changes to their professional behaviour.³³ There is anecdotal evidence to suggest that members of the legal profession or their spouses are deemed high-risk!

Declining to treat high-risk patients or discontinuing the practice of obstetrics altogether are facets of defensive medicine sometimes categorised under an umbrella called "avoidance behaviour" where the focus is on getting out of the way. An unsatisfactory consequence of this is that the public's access to essential medical services is curtailed.

The second aspect of defensive medicine is called "assurance behaviour", where the focus is on protecting oneself. This encompasses practices like prescribing more medication than medically indicated and suggesting additional, often invasive procedures such as biopsies to confirm diagnoses. In 2003, a survey conducted in Pennsylvania of 824 physicians from six specialties at high risk of litigation, including O&G, suggested that such assurance behaviour was fairly prevalent. Amongst O&G specialists, 59% of the survey respondents said that they "often referred patients to other specialists in unnecessary circumstances" whilst 54% of the survey respondents reported that they "often ordered more diagnostic tests than medically indicated".³⁴ The obvious effect of this is to increase the patient's medical costs without any corresponding medical benefit.

Moreover, there may be a shift from one type of risk to another. One important way in which defensive medicine has manifested in the O&G context in the United States is in the increased incidence of caesarean sections. In the late 1980s, the threat of malpractice suits was commonly cited by O&G practitioners as a consideration contributing to the increased rate of caesarean sections.³⁵ This seems to have persisted. In the 2012 American survey I referred to earlier, among the 5,000-odd respondents who reported making changes to their professional practice as a result of the fear of malpractice liability, 23.8% said that they had increased the number of caesarean deliveries. In Singapore, the Caesarean section rates at KK Hospital rose from 4.8% in 1974 to 23.3% in 2000 and one of the reasons cited for this trend was the fear of malpractice suits.³⁶

This is in spite of the existence of literature suggesting that the risks of the procedure are such that it should be avoided except where medically necessary. In a wide-ranging study of more than 100,000 deliveries in nine Asian countries, not including Singapore but including our neighbours such as Thailand and Vietnam, it was found that intrapartum³⁷ caesarean sections were associated with a higher risk of maternal morbidity

than spontaneous vaginal delivery. In the study, maternal morbidity was defined to include admission to intensive care, blood transfusion, hysterectomy or internal artery ligation. Even though there seemed to be evidence that caesarean sections decreased the risk of foetal death or injury, the authors of this study concluded that caesarean sections should be done only where there exists some medical indication to improve the outcome for the mother or the baby.³⁸

It therefore does seem to be the case that the concern with defensive medicine is real and not imaginary. The detrimental effects of defensive medicine are apparent – higher costs; in some cases a denial of access to medical care and attention; and a tendency towards unnecessary or even sub-optimal medical decisions ironically taken in an attempt to limit legal risk. We would do well to avoid these potential pitfalls.

The difficulty is in addressing some of the concerns that doctors face while ensuring that disaffected patients can access the courts for solutions. Can we imagine a system of medical litigation that does not generate undue fear in doctors, while remaining substantively just? This might require us to re-think our medical litigation paradigm. Let me suggest some ideas to start the discussion.

Mediation

There is a saying in the legal profession that if losing the case is the worst thing that can happen to a litigant, then starting the case is the next worst thing. Litigation is frightening. It often takes place in the spirit of acrimony and has, in some respects, the hallmarks of a battle. It can ruin relationships, and the public nature of a trial means that dirty linen can be freely aired. The litigants themselves will almost invariably have to enter the witness box. When they do so, they face the daunting prospect of intense cross-examination by opposing counsel that can last days or even weeks. The whole process can drag on for years and during this time it will often feel impossible to get on with life as the ongoing litigation becomes a source of constant stress. On top of all this, there is the fear that inevitably comes with surrendering whatever control one has over the outcome of this frightening situation to a third party who may struggle to understand the technical issues in the case.

The pitfalls of litigation have become more widely recognised in recent years. The result has been a general push towards alternative methods of dispute

resolution for private disputes, in particular, a process known as mediation. Unlike litigation, there is no adjudicator who makes a decision and imposes it on the parties in mediation. The role of the mediator is purely facilitative; any decision is made by the parties who therefore retain autonomy over the outcome and the process. It is possible, however, for a skilful mediator to suggest approaches to the dispute that yield solutions to the very problem the parties are troubled by. Moreover, all discussions that take place during mediation are confidential.

Of course, if the parties are unable to come to an agreement, they will have to proceed to litigation. In that sense, it is true that if mediation fails it merely prolongs the litigation process. But if it succeeds it saves parties a great deal of time and stress. The statistics in this respect are impressive. From 2011 to 30 September this year, 73% of the 718 matters that went for private mediation administered by the Singapore Mediation Centre resulted in a settlement. The figures are even more encouraging in the specific area of medical negligence – a settlement was reached in 17 out of 19 cases, a success rate of 89.5%.

It seems to me that the fear of medical malpractice might be reduced to some degree by a culture of taking mediation seriously by ensuring that all potential litigants are apprised of this avenue and also of its potential benefits. Indeed, there is some basis for thinking that mediation may be particularly apt in the medical malpractice context. It has been suggested that when patients sue, they do not necessarily do so for the money. What they may really want is a chance to be alone in a room with the doctor for 15 minutes.³⁹ Sometimes, they want an explanation, an apology or a real gesture of compassion and empathy more than they want to destroy the doctor's reputation or to extract a large monetary payment.

These things matter because in a patient-doctor relationship, both parties tend to have different perspectives and expectations. Patients often look up to their doctors as healers holding the solution to a problem that has become a source of dire fear and anxiety. To them, the doctor might be thought of as a miracle worker.⁴⁰ On the other hand, the doctors' primary concern might be to deal with the disease rather than the person. The doctor might not exhibit as much sympathy as the patient desires because that which the patient finds alarming and worrying, the doctor sees as routine.⁴¹ Doctors are also very

busy people and there is a limit to how much time they can spend with their patients. Doctors might not share every bit of information with the patient who he thinks of as a layman. However, in this day and age of the Internet, most patients will come armed with a little knowledge and may therefore feel disregarded when the doctor does not engage them as someone medically sophisticated and knowledgeable.⁴²

Hence there is fertile ground for ill-will when things go wrong. But it also means that solutions might be found in righting the real problems of dashed expectations and miscommunications, which greatly differ from allegations of malpractice and incompetence.

Thus it may be helpful to think of mediation as potentially being the first port of call in the medical malpractice context. If even some medical malpractice claims can be resolved at this stage without the matter having to go to trial, I imagine it will be welcomed by all doctors. This will require the buy-in of the key stakeholders including the insurance companies, lawyers and the medical profession.

To this end, in its effort to strengthen its outreach to the healthcare industry, the Singapore Mediation Centre, supported by MOH Holdings, launched a pilot Healthcare Mediation Scheme in April this year to offer subsidised mediation services for disputes between patients and healthcare institutions. 42 trained mediators accredited to the Singapore Mediation Centre were appointed by MOH Holdings as specialist healthcare mediators for this Scheme. 7 of these are medical doctors; Dr Joseph Sheares, a well-regarded cardiothoracic surgeon, is one of those on the specialist panel, while the others on the specialist panel have had experience in the healthcare industry.

This Scheme offers incentives for parties to resolve their differences through a frank and confidential discussion, including by providing free mediation advice for those who need help deciding whether to go down this route as well as in preparing their case for mediation; and in certain cases even providing for a full subsidy of the mediation cost if there is an early settlement!

In addition, since 2011, the Singapore Mediation Centre has worked with the Singapore Medical Council to implement a referral procedure, under which the Complaints Committee of the Medical Council may refer disputes between a complainant and a registered

Medical Practitioner that are not in fact concerned with professional misconduct to mediation.

In seeking to encourage more healthcare institutions to consider mediation as the first step in resolving disputes, the Singapore Mediation Centre has also managed to secure the pledge of several healthcare institutions and groups to become signatories to the Singapore Mediation Charter. The pledge signifies their commitment to resolve disputes outside traditional litigation channels.

A more inquisitorial and less adversarial approach

The considerations in favour of mediation lead me in turn to a second way to re-imagine our medical litigation paradigm. It consists of a shift from an adversarial approach to a more inquisitorial one. In the common law system, litigation is an adversarial process. Each side is represented by advocates who advance their clients' case with full vigour. The central idea is that the best way for the truth to emerge is for each side to present its case and for its opponents to subject that case to critical examination and scrutiny. Much autonomy is afforded to the parties as to how they choose to present their own case and attack their opponent's. The judge is more a referee than he is a director of the proceedings. This is to be contrasted with an inquisitorial approach, which is practised in civil law systems such as in France and Germany. There the judge is the one who asks the questions and directs the course of the inquiry. It is impossible to say that one system is always better than the other. The adversarial system has served us well throughout our history and I am certain this will not change. However, there may be some specialised areas where, for particular reasons, we may be better served by a less adversarial and more inquisitorial system.

One disadvantage of the adversarial system is that it tends to polarise parties. Each party takes a position, which then comes under heavy attack from the opposing party. Parties become increasingly entrenched in their positions and are often unable to see things from any other perspective but their own. This can especially be so in an area like medical negligence in which emotions run very high and there is a clash between the patient who feels she has been wronged and the doctor who believes he has done his best. Such polarisation worsens the already-fractious relationship between parties, possibly to a point beyond repair.

A parallel might be found in the area of family law. There, too, emotions reach fever pitch; and since the divorce cases which eventually come before the courts are those in which the parties cannot reach agreement, those are also usually the cases in which parties most seethe with animosity. The hostility is usually exacerbated by the court proceedings. Such cases are often replete with allegation and counter-allegation of extra-marital affairs, physical, verbal or other abuse, and neglect of the children. It can be a challenging task for the judge to sift the truth from the exaggerations and outright falsehoods. In the public consultation exercise conducted by a Committee for Family Justice that was formed last year, one respondent astutely observed from personal experience that the adversarial system connoted a zero-sum game in which there is a winner and a loser. This encourages lawyers to “write in a skewed manner that distorts reality.”⁴³ In July this year, the Committee for Family Justice recommended that family litigation move away from the adversarial model towards a more inquisitorial, judge-led process, in which the judge is empowered to guide and direct the proceedings proactively instead of relinquishing this prerogative to the lawyers, as is usually the case in the adversarial system. The Family Justice Courts were opened on 1 October 2014 and the details of its new working methods are in the process of being worked through, but those of us who are behind this initiative firmly believe that it will yield better outcomes in this area.

The broad vision underlying our family justice reforms could well have a place in medical negligence litigation as well. Indeed the medical profession has indicated a preference for a less adversarial approach in the context of disciplinary proceedings, albeit for reasons that differ somewhat from those I have been discussing. This was noted in the report of the Singapore Medical Council review committee for disciplinary processes that was submitted to the Council in November last year.⁴⁴ The adversarial mode was thought to increase complexity and become as much a fight between lawyers as a determination of fault or lack thereof. This is surely as much a consideration in medical negligence cases as it is in disciplinary proceedings, and so I imagine that the medical profession would also welcome a more inquisitorial approach in medical negligence litigation.

Judges have as their sole objective to find the truth and arrive at a just outcome. If they were to take the lead in the litigation process in these cases, they could keep the focus firmly on fact-finding and leave

out of the equation emotionally-charged matters of peripheral relevance that parties might otherwise be keen to put forward to cast their opponent in a negative light or just to give vent to their emotions. In the more clinical and detached atmosphere that a judge could cultivate, parties may be more candid and open, thus allowing the truth to emerge more easily. This might also prevent relations between the parties from deteriorating further, and perhaps parties might come round to the idea of working out their differences through mediation, even in the middle of proceedings, for mediation can be resorted to at any stage.

There is a further reason to explore this option carefully. Medical negligence cases will often have a significance that extends beyond the immediate facts of the case. Such cases might well reveal systemic or institutional weaknesses in the way medicine is generally practised. In that sense there is a strong public interest in the truth coming to light, so that lessons may be learnt and mistakes not repeated. A judge-led litigation process that is more inquisitorial in nature would seem more likely to facilitate this.

The Bolam test and the appointment of assessors

Let me turn to the third way in which we could possibly re-think our medical litigation paradigm. This has to do with the limitations of judicial expertise. Judges are not doctors. We certainly do not have the specialised learning and experience of a medical professional. And the last thing you want is a judge who sets out to educate himself in the intricacies of medicine by engaging in some internet research. All this poses a considerable difficulty in medical malpractice cases when the plaintiff and the defendant each call expert witnesses who then give conflicting evidence. How is the court to adjudicate on matters it knows little about? Let me return here to the *Bolam* test.

In the *Gunapathy* case there was some suggestion that the *Bolam* test is seen, at least in Singapore, as a solution to the problem of limited judicial knowledge of medical matters. Allow me to quote at some length from the judgment:⁴⁵

...this court would politely decline the invitations of both counsel to enter the fray that is the arena of divided medical opinion. ... [A] lawyer-judge undertakes such an enterprise at his own peril. ... [M]edical arguments often take on a life of their own. Riposte follows rebuttal, as no two doctors seem to agree on the thorny issues that inhabit the frontiers of medical science. The lawyer-judge,

while eminently equipped to follow such arguments, finds himself quite out of his depth when called upon to adjudicate over them. This is why the legal principle in [Bolam] restrains the Judiciary from treating medical experts as they would any other. ... It would be pure humbug for a judge, in the rarified atmosphere of the courtroom and with the benefit of hindsight, to substitute his opinion for that of the doctor in the consultation room or operating chamber. We often enough tell doctors not to play god; it seems only fair that, similarly, judges and lawyers should not play at being doctors.

...

At the heart of the Bolam test is the recognition that judicial wisdom has its limits. A judge, unschooled and unskilled in the art of medicine, has no business adjudicating matters over which medical experts themselves cannot come to agreement. This is especially where, as in this case, the medical dispute is complex and resolvable only by long-term research and empirical observation. Furthermore, the lawyer-judge in "playing doctor" at the frontiers of medical science might distort or even hamper its proper development.

In these passages there are two different reasons advanced to justify the *Bolam* test. The difference between these two justifications is subtle but important. The first has to do with the limitations of medical knowledge. Reference is twice made to the "frontiers of medical science", which reminds us that since there is an end to medical knowledge, there comes a point where, in effect, one doctor's guess is as good as another. To the extent the *Bolam* test rests on this notion that doctors should not be penalised for acting reasonably in uncharted waters, it seems fair, legitimate and sensible.

The second justification, however, has to do with the limitations of judicial expertise in the field of medicine. The court in the *Gunapathy* case observed that judges are "unschooled and unskilled in the art of medicine" and noted that the *Bolam* test "restrains the Judiciary from treating medical experts as they would any other" – that is, any other experts.

The latter justification has been criticised.⁴⁶ What makes medical science so special? There are many other fields of knowledge in which judges have little or no expertise. Matters of engineering, for instance, can be formidably technical and complex. So too matters of computer science. Yet in those fields there is no direct equivalent of the *Bolam* test, and no-one says to the judge that he has no business resolving

or adjudicating upon differences of views between engineering or other scientific experts just because the judge himself is unschooled in these matters.

The precise justification on which the *Bolam* test rests may be important because it could have a bearing on how we should approach the expert evidence. Because of the *Bolam* test, lawyers are sometimes incentivised to "shop around until a sympathetic expert is found". A survey carried out in the UK among expert witnesses in general revealed that many of them had been asked by lawyers to modify their reports or opinions, and some of them had in fact done so.⁴⁷ As I said earlier, in theory expert witnesses owe a duty to the court to be impartial. But when a lot is at stake, as is often the case in litigation, reality might differ somewhat from theory. This may be exacerbated by the nature of the traditional adversarial process, which is that the expert takes a position that the opposing counsel will endeavour to demolish. A fairly common reaction is for the expert to become defensive and to focus on not looking silly. After all, his professional reputation might also be at stake. It is probably unfair to place the blame for this entirely on the *Bolam* test. However, a possible implication of this is that it might be dangerous to defer too much to the opinions of the experts in the name of judicial restraint on account of judicial inexperience.

While I am on this point about experts, let me digress briefly to mention a process known as "hot-tubbing", which was developed with the aim of increasing the utility of expert evidence. Instead of experts taking the witness stand one by one, with no opportunity to engage one another, in "hot-tubbing" the experts sit side by side and give evidence concurrently. Each expert gives his reasons to support his conclusions while challenging the opposing expert's conclusions and the latter has the opportunity to respond immediately. Throughout the process, the court and counsel can ask questions; counsel are also permitted to provide facts to support or challenge the reasons given by the experts. It is hoped that this will make the process of expert evidence more of a conversation and less of a quarrel and that this should lead more readily to experts finding common ground through a reasoned and reasonable discussion.

Even as we seek to improve the way we take in expert evidence, the courts will not and should not accept expert medical opinion unquestioningly. The *Bolitho* addendum makes it clear that judges should test the

logic of these opinions, and if they are then found wanting, they should be rejected. However, this leads to a paradox. On one hand the judge is expected to know enough to test the logic of expert medical opinion, which includes ascertaining whether the opinion controverts “known medical facts or advances in medical knowledge”.⁴⁸ On the other hand the judge is also told that he “has no business adjudicating matters over which medical experts themselves cannot come to agreement”⁴⁹ because he is unschooled in the art of medicine.

In fact, there might be an alternative way of addressing or at least mitigating the problem of judicial inexperience in matters of medicine. It is a mechanism that has been available for at least two decades but it was invoked in the medical malpractice context for perhaps the first time just this year. I am referring here the court’s power to appoint assessors.⁵⁰ The court can appoint an assessor on the application of the parties or it can do so on its own motion. Assessors are persons of skill and experience in the subject matter to which the legal proceedings pertain, and their appointment will invariably be most apt in cases of technical complexity. The function of the assessor is to assist the judge to come to grips with material that would be beyond his usual range of expertise and competence. I should emphasise though that the judge remains the sole decision-maker. In medical litigation, the court may therefore appoint a doctor with expertise in the relevant field to sit as assessor. Unlike an expert witness, the assessor is not called by any of the litigants and cannot be cross-examined. The assistance of assessors can be invaluable in furnishing the judge with the medical and scientific context and background that expert opinions may often assume without spelling out in detail.⁵¹

There are no detailed rules or guidelines on how court proceedings are to be conducted with assessors. Indeed our Rules of Court state that an assessor “shall take such part in the proceedings as the Court may direct”.⁵² Thus what role an assessor plays in a given case is very much at the court’s discretion. The assessor may be asked to tender a formal report, or he may be called upon to give informal oral advice only.⁵³

At the trial, the assessor will sit alongside the judge. He may sit in for the entire trial or for part of it only. He is free to suggest to the judge questions to pose to the expert witnesses.⁵⁴ There is a view that the assessor is not permitted to ask questions directly to

the witnesses, but I see no objection to this provided it is done in open court and provided that the parties can respond to the questions put by the assessor. Indeed, the judge may discuss points with the assessor at any point in time. But as I have said before, the assessor is not a substitute for the judge.

Given the potential importance of an assessor’s views to the decision of the judge he is advising, it would be only natural for parties to wish to have some say in the identity of the assessor. This is something that is permitted by our Rules of Court, which provide that the court shall notify each party of the name of the proposed assessor and that parties are entitled to object to the appointment of that proposed assessor.⁵⁵ However, in order to prevent objections and counter-objections from going on indefinitely, it is ultimately the court which decides who the assessor will be.⁵⁶

The appointment of assessors is not a universally acclaimed course of action. Some time ago a great Australian judge questioned the wisdom of using an assessor.⁵⁷ Amongst other criticisms, he suggested that it was not clear how assessors would be an improvement over resolving technical issues using only the testimony of expert witnesses. Assessors, he said, would be a poor substitute for experts since parties could not cross-examine them. Moreover, if assessors were meant to be an addition to the experts deployed by the parties it would raise the costs of trial without discernible benefit.

It should be noted first that this critique of the use of assessors comes from a perspective that is rooted entirely in the common law adversarial process. From that purist perspective, one might see the force of the point that it is best to leave the judge to his own devices and let him work through the arguments, the expert opinions and draw such conclusions as may emerge from cross-examination.

Even then, the position is not straightforward. It is no doubt true that on one level assessors do add to the costs of trial. After all they take time off to assist the court and should be remunerated for this. However, the hope is that their use will ultimately save costs because the judge should be able to understand the technical intricacies and reach the heart of the case more quickly with their assistance. If we are looking to move away somewhat from a pure adversarial model to one where the judge leads the inquiry, the assistance of an assessor seems

indispensable. On top of that, and this is where I come back to the need to minimise doctors' fear of medical litigation, it might give doctors greater confidence in the process and may mitigate the dangers of defensive medicine. If mediation fails and the medical malpractice claim must be litigated, they have the assurance at least that a fellow professional who intimately understands the unique and perhaps often unseen challenges of medical practice is there to help the judge work through the intricacies of a mass of technical material.

I believe that the use of assessors might well be advantageously combined with a shift towards a more inquisitorial and judge-led litigation process. To take just one example, as positive a development as hot-tubbing has been for receiving expert evidence, I am certain its value would be immensely enhanced in a medical case if the judge leading the experts' conclave were assisted by an assessor.

Undoubtedly, there would be many issues to work through. We would have to find doctors willing to set aside the time for this. We would need to consider how such resources should be funded. And we would benefit from guidelines or protocols to spell out how assessors can be used without compromising transparency in the judicial process. However, none of these seem to pose insuperable obstacles.

I should finally clarify that I am not saying that with the use of assessors, the *Bolam* test can or should be done away with. I only address one rationale for the *Bolam* test, namely that judges may lack the knowledge to assess the expert evidence. There remains another important justification, which is that doctors may legitimately disagree on approaches and probable outcomes because of the limitations of medical science and knowledge. But, the *Bolam* test, even so justified, has come under occasional fire from courts and academics. It is said that it carries the risk of occasional abdication of judicial responsibility;⁵⁸ that deciding what a reasonable doctor would have done is sometimes not a matter of medical science but of society's social, moral and political values;⁵⁹ and that it provides a defence for doctors who lag behind the times.⁶⁰ The validity of these criticisms have yet to be tested and the day may yet come when my colleagues and I find ourselves having to deal with the issue head on.

Until then, for the avoidance of any doubt, I should make it clear that the determination of the standard of care in medical malpractice law remains governed by the *Bolam* test.

Conclusion

I began this talk by suggesting that doctors such as yourselves often view the law as an unpleasant and unhappy intrusion into medical practice. Certainly it can disrupt lives and careers or even destroy them. But when the fear of malpractice liability is at the forefront of doctors' minds, this has the potential to adversely affect medical practice. It is not in the public interest if such fears were to lead to medical practices which are ultimately detrimental to society at large. Of course we cannot do away with malpractice claims. Indeed properly constructed, a legal system which upholds the possibility of such claims should result in rising standards and in that way serve the public interest. What I have put forward this evening are possible ways of re-thinking the way we might conduct medical litigation. These are not by any means radical changes but I believe that they may well serve us better when law and medicine must meet in the context of alleged medical malpractice.

I hope that these ideas can be aired and discussed with and within the medical community; and if there is interest, then with other stakeholders including the courts, so that together we might make an informed choice as to whether we should move in this direction. Such processes might reduce acrimony and increase the chances of medical negligence matters being settled out of court; and where this is not possible, one imagines that all parties would welcome a situation where the chances are enhanced of litigation being conducted in a focussed, targeted and clinical manner, with the judge being better-placed to understand the technical complexities and intricacies of medical science and practice. Perhaps, through a process of dialogue consultation and collaboration, we might find that the coming together of doctors and lawyers proves, after all, to be an occasion for constructive solutions to address an important issue that concerns us all.

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Prevalence of Female Urinary Incontinence in Singapore – A Matter of Urgency?

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INTRODUCTION

Urinary incontinence (UI) is defined by the International Continence Society (ICS) as the involuntary leakage of urine. Though it is not life-threatening, it has significant psychosocial impact on affected individuals, and may lead to social isolation, lack of self-confidence, shame and feelings of depression^(1,2,3). It may also impose a burden on their carers and public healthcare services. In order to develop effective policies to improve public awareness, assess the healthcare requirements of an ageing population and effectively manage urinary incontinence, it is important to estimate the prevalence of UI.

To date, there has only been one epidemiological study in Singapore investigating the prevalence of UI among the elderly population aged 65 years and above.⁽⁴⁾ This study concluded that there may be scope for the provision of primary health care continence services.⁽⁵⁾ However, there is no local population based study estimating the prevalence of UI across age groups.

Our study aims to establish the prevalence of female UI in community dwelling Singapore women across multiple age groups, and to assess perception of the condition among the local population.

Our data was previously unpublished and as there has been no other prevalence survey performed on a similar scale in the interim, we feel that it is important to report our findings as the demographics have not changed even though the study was conducted a number of years ago.

METHODS

A nationwide, cross-sectional census of 3389 women aged between 15 and 85 years was conducted from July to September 2002. A 26-item interviewer-administered questionnaire was devised to assess each respondent's demographics, self-reported severity of UI symptoms if any, risk factors such as parity and mode of delivery, perception of the condition and awareness of treatment options. Interviewers were employed and received prior standardized training by the principal investigator on how to administer the questionnaire.

Women were approached by the interviewers at randomly selected geographical locations islandwide, at different times of the day, on all days of the week. Verbal consent was obtained prior to questionnaire administration. Respondents were encouraged to clarify with the interviewer if they did not understand any terminology used in the survey. They were reassured of the option to decline to answer any or all questions in the questionnaire if they felt uncomfortable with it. The study was approved by the KK Women's and Children's Hospital review board prior to commencement, and was sponsored by a hospital research grant.

In accordance with ICS recommendations, ⁽⁶⁾we took precautions to ensure that terminology such as "quality of life" and "bother" were not used in the definition of UI, in order that patient's perceptions not be allowed to distort prevalence estimates.

To ensure that our questionnaire was easily understandable, a preliminary questionnaire was piloted among a small number of women ($n = 38$) presenting to outpatient clinics at the same centre. This pilot study was conducted a few months prior to commencement of the actual study, and feedback was obtained from the women regarding possible improvements such as clarification of unfamiliar medical terminology. After reviewing the preliminary results of this pilot study, some questions were revised and an improved, final version was formulated. The results of this pilot study were not included in the final analysis of our results.

The definitions of incontinence as described in the questionnaire are detailed below, in line with ICS definitions:

- Stress incontinence: leakage of urine during sneezing, coughing, laughing, lifting, jumping, jogging, walking
- Urge incontinence: leakage of urine when (you) cannot control the urge to pass urine
- "No Warning" incontinence: leakage of urine not during physical activity nor when having the urge to pass urine
- "Continuous" incontinence: Leakage of urine more or less all the time

The data was entered into a computerised database and analysed using SPSS for Windows version 9 (SPSS Inc, Chicago, USA).

RESULTS

A total of 3389 community dwelling women were surveyed over the study period, with a mean age of 38.7 years (20 to 85 years). The racial distribution is illustrated in Table I.

Table I: Racial distribution of respondents (n=3389)

Race	Number of respondents	Percentage (%)
Chinese	2270	67.0
Malay	678	20.0
Indian	360	10.6
Others	81	2.4

The ethnic characteristics of our study population are similar to those of Singapore's resident population in 2000. ⁽⁷⁾ About 40% of our respondents were aged under 30 years old, while the remaining age groups were equally represented by 15% in our respondent population. (Table II).

Table II: Age distribution of respondents (n=3386)

Age Group (years)	Number of respondents	Percentage (%)
<30	1311	38.7
30 to 40	514	15.2
40 to 50	533	15.7
50 to 60	524	15.5
>60	504	14.9

Regarding parity, a total of 2033 women (60.0%) had at least one child, with the mode of delivery shown in Table II.

Table III: Mode of delivery among respondents with at least one child (n=2033)

Mode of Delivery	Number of respondents	Percentage (%)
Normal Vaginal Delivery	1907	93.8
Caesarean Section	105	15.2
Assisted Vaginal Delivery	21	1.0

Table IV: Prevalence of urinary urge incontinence and stress urinary incontinence

Age Group (years)	Number of respondents	Prevalence of UUI within age group (%)	Prevalence of SUI within age group (%)
<50	2358	3.0	5.9
>50	1028	9.0	35.8
Pooled	3386	4.8	13.3

Our study corroborates previous research showing that the prevalence of UUI and SUI increases with age.^(8, 9) Overall prevalence of UUI and SUI was 4.8% and 13.3% respectively, with the former doubling and the latter tripling in women aged more than 50 years old. (Table IV). The local prevalence and patterns of female UI are similar to those of other predominantly Chinese populations such as Hong Kong.^(10, 11, 12)

Table V: Age group distribution of respondents among those who perceived incontinence to be normal, to be treatable and who knew where to seek treatment

Age Group (years)	Perceive that incontinence is a normal part of life (%)	Know that incontinence is treatable (%)	Know where to seek treatment for incontinence (%)
<30	44.2	39.5	33.9
30 to 40	19.5	22.2	25.7
40 to 50	15.3	17.0	20.0
50 to 60	9.6	12.6	12.2
>60	11.4	8.7	8.2

Regarding illness perception, we assessed whether women felt that incontinence is a normal part of life, whether they knew that it is treatable and if so, where to seek treatment. Among women who were aware that incontinence is treatable, we observed a linear decrease in awareness with increasing age (Table V). Likewise, a similar pattern was noted in terms of awareness of where to seek treatment.

Among women who perceived that incontinence is a normal part of life (Table V), nearly half were aged <30 years. This may be partially explained by the proportionally larger number of respondents from that age group. Beyond age 60, a proportionally greater number of respondents perceived incontinence to be a normal part of life.

The mean age of natural menopause in our local population is 49.0 years.⁽¹³⁾ Although recent studies have shown that hormone deficiency following menopause is unlikely to play a major role in pelvic organ support⁽¹⁴⁾ or urinary incontinence,⁽¹⁵⁾ stratification of prevalence of urinary urge incontinence (UUI) and stress urinary incontinence (SUI) by age group using a cut off of 50 years showed a statistically significant ($p < 0.05$) increase in both UUI and SUI after the age of 50. This corresponds to the literature which also describes an increase of UI with age.^(9, 16, 17)

There was some degree of awareness that UI is not normal and can be treated. Among women aged <30 years old, only 15.4% perceived UI as a normal part of life and 37.1% were aware that it is treatable. Half (52.9%) of their counterparts aged 30-40 years old were aware that incontinence is treatable but only a quarter of them knew where to seek treatment for incontinence. This has important implications in terms of healthcare allocation resources.

Table VI: Treatment seeking behaviour of women with UI

Age Group (years)	Consulted a primary care physician (%)	Consulted a specialist (%)	Undergone previous incontinence surgery (%)
< 50	15	1	1
≥ 50	10	2.9	2.7

Across all age groups (pooled data) using a cut-off of 50 years old, the vast majority of women preferentially

consulted their primary care physician as compared to seeking specialist treatment for UI. This may be a manifestation of the stigma associated with UI^(1, 2, 3) and in consequence, has important implications in terms of adequate allocation of healthcare resources to patient and carer education.

In addition, 13% of women reported requiring the daily use of incontinence products such as diapers, pads or undergarments. 17% of women reported restricted social activity due to SUI.

Table VII: Comparison with other studies assessing prevalence of female UI

Reference	Study population size	Age of respondents (years)	Prevalence of UI in women (%)
Yarnell et al	1000	≥ 17	45
Diokno et al	434	≥ 60	37.7
Sandvik et al	1820	≥ 20	29.4
Samuelsson et al	491	20-59	27.7
Hägglund et al	3076	40-80	26
Simeonova et al	2176	≥ 40	14
Samuelsson et al	491	40-60	27.9
Ueda et al	968	20-96	53.7
Bortolotti et al	2767	≥ 40	11
Moller et al	2860	40-60	72
Temml et al	1262	20-96	26.3
Sampselle et al	3258	42-52	56.9
Burgio et al	523	14-42	11.3
Our study	3389	20-85	13.3

DISCUSSION

Our study highlights an important health problem faced by women in Singapore. Although the data may not be up to date, to our knowledge it is currently the only estimate of the prevalence of female UI in Singapore across multiple age groups in community based women. Pooled estimates of SUI and UUI were calculated across all age groups. (Table IV). When correlated with local

census data,⁽⁷⁾ the number of women with self-reported UI is 186 943, 125 299 of whom are aged above 50. While this highlights the magnitude of the problem, it may not be particularly helpful in terms of health policy decision making; as Chiarelli et al⁽¹⁸⁾ points out, the woman with transient incontinence in the last few weeks of her pregnancy requires different resources compared to the woman living in a nursing home who has dementia and incontinence.

Our age-stratified prevalence rates of UI in Singapore should be interpreted with caution. Firstly, our study population did not include women who were institutionalised. The prevalence of UI among women living in nursing homes may be higher than that of community dwelling women.⁽¹⁹⁾ Secondly, we did not assess whether UI experienced was sporadic or of regular occurrence.

Thirdly, biased response rates may invalidate prevalence estimates.⁽²⁰⁾ We aimed to obtain the highest possible response rates, in order to minimize such bias.⁽²¹⁾ As direct interview generally gets higher response rates as compared to postal or telephone questionnaires,⁽²²⁾ we chose this method of surveying the population. However, the responses elicited by interview questionnaire may be more susceptible to social desirability bias as compared to those elicited by post.⁽²²⁾ Direct interview may also be less standardized, with wide-ranging prevalence estimates reported by different interviewed individuals.⁽²³⁾ In order to decrease such bias, our clinical research staff undertook prior standardized training on questionnaire administration and clarification of any medical terminology prior to the start of the study.

While biased response rates due to data collection methodology may be compensated for during data analysis, unknown response bias, such as the possibility of different response rates between continent and incontinent women, is much more difficult to account for.^(20, 21) For instance, incontinent women may deny UI due to embarrassment, or they may respond to a greater extent than continent women because they find the subject of more relevance.

We collected data on reported symptoms of UI but it is not possible to diagnose incontinence as a condition based on history alone. For instance, the diagnosis of motor urge incontinence or detrusor overactivity (DO) requires the use of urodynamic equipment⁽²⁴⁾. Many authors^(25, 26, 27, 28) conclude that patient history alone is a poor predictor of genuine stress incontinence or DO.

In spite of the limitations of the study, the sample group may be considered representative of the country's female population as the study demographics are comparable to the national census. It is also one of the largest nationwide studies performed globally (Table VII). The interviewers received prior standardized training by the principal investigator on how to administer the questionnaire, to decrease the effect of interviewer bias. We attempted to keep bias to a minimum by interviewing the women at different, randomly selected geographical locations and with temporal variation which included different times of the day on both weekdays and weekends. As Singapore is a multiracial country, and it is plausible that ethnic differences in the prevalence of UI may exist, we had hitherto been hesitant to extrapolate prevalence estimates of other predominantly Chinese populations such as Hong Kong to our local population. Though the data may not be up to date, our study has sound methodology, is the largest of its kind among predominantly Chinese community-dwelling populations worldwide and is the first to demonstrate that overall prevalence and patterns of SUI and UUI are comparable.

For a woman to seek treatment for UI, she first has to identify that it is a problem - that it is not a normal part of life, know that it is treatable and know where to seek treatment for it, without fear of stigmatization. Our study showed that across all age groups, less than half of the women who were aware that incontinence was treatable knew where to seek treatment for it. This illustrates the importance of community based health education for women who may not even perceive that UI is abnormal, let alone know that it can be treated or where to seek treatment. We postulate that the large discrepancy may not be solely due to lack of knowledge; it may actually reflect fear of stigmatization. These suboptimal rates of help-seeking behaviour are not limited to our local population.^(3, 30) While the urogynaecology department in our centre sees a large proportion of women with UI locally, we estimate that at least 70% of women remain untreated.⁽⁷⁾ Help-seeking behaviour may also be impacted by factors such as frequency of contact with primary care services, the gender of the clinician, routine screening questions during consultation and comorbidity.⁽²⁹⁾ Educating patients, their carers and healthcare professionals is key to eliminating stigmatization of the condition.

Our study also paves the way for further research, for instance how the prevalence of UI in our local population may correlate with confounders such as body mass

index (BMI), incidence of falls and quality of life indices including sexual activity.

Obesity is a risk factor for UI in women^(31, 32) and the prevalence of all types of UI (urge, stress and mixed) has been shown to increase with increasing BMI.⁽³³⁾ There is evidence that UI in obese individuals is due to raised intra-abdominal and intravesical pressure as a result of increased weight of the abdominal wall.^(34, 35) The obese diabetic is at particularly high risk of incontinence, if autonomic neuropathy and/or osmotic effects are present. The recent implementation of a nation-wide weight management programme⁽³⁶⁾ to curb rising obesity rates reflects growing concern about obesity as a public health concern, and may indirectly influence the incidence of UI in our local population.

UI is also associated with an increase in falls, both in community dwelling^(37, 38) and institutionalised women. A recent meta-analysis concluded that the odds of falling were 1.45 (95% CI 1.36 to 1.54) in the presence of any type of urinary incontinence among community dwelling women, and recommended that fall prevention programs include an assessment of incontinence and appropriate referral when necessary.⁽³⁷⁾ Early diagnosis and appropriate treatment of urge incontinence may decrease the risk of fracture, which may alleviate the burden on healthcare economics.⁽³⁸⁾

From a public health perspective, adequate allocation of healthcare resources to patient and carer education is paramount. Public health forums, media campaigns and information pamphlets distributed at government polyclinics, general practitioners' and specialist women's clinics all contribute to increasing patient awareness and eliminating the stigma associated with UI. This is of utmost importance as high prevalence estimates among women presenting to primary healthcare services are often compounded by issues of embarrassment or ignorance among physicians and women about the condition.

Our study did not include institutionalised women, hence the true prevalence of UI would be expected to be even higher than reported.⁽⁴⁾ Education and heightened awareness of physicians and medical staff caring for institutionalised women, via continuing medical education (CME) seminars and symposia is crucial. Direct questioning and screening for incontinence symptoms by the physician may be beneficial in overcoming the stigma and embarrassment that women may feel. Similarly, it may also help in correcting women's misconceptions that

it is a normal part of the ageing process, or that it cannot be treated either conservatively or surgically.

Our data (Table VI) illustrates that the vast majority of women preferentially consult primary care physicians about UI. Efforts should therefore be made to engage and educate health partners, primary care physicians and members of allied health services such as nursing staff who provide home visits, to maintain a high index of suspicion at every available contact opportunity.

Healthcare professionals should be aware of the incontinence-specific quality of life scales available for initial symptom evaluation, such as the International Consultation on Incontinence Modular Questionnaire (ICIQ), Bristol Female Lower Urinary Tract Symptoms (BFLUTS) or Urinary Incontinence Quality of Life Scale (I-QOL) ⁽⁴⁰⁾. They should also be familiar with first-line management options, including lifestyle interventions such as reduction in caffeine intake or modification of fluid intake assessed from the woman's bladder diary. Women with UI should be informed that a trial of pelvic floor muscle training (PFMT) of at least three months'

duration may be beneficial ⁽⁴⁰⁾ and may even help avoid or delay the need for surgery. Women who require incontinence surgery may be reassured that depending on the procedure, continence rates of up to 94% may be achieved. ⁽⁴⁰⁾

Consideration should be given to implementing routine screening, particularly in women aged over 50, with validated screening tools such as the UI severity index ⁽³⁹⁾ which have been described in the literature. Routine Papanicolaou smear testing presents itself as a regular contact opportunity for the primary care physician to screen women. While performing the smear, clinicians should ask the woman for symptoms of UI, and request her to cough and strain during the pelvic examination, in order to better elicit signs of pelvic organ prolapse and SUI.

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An Unusual Case of Dysgerminoma and Review of the Literature

Liu SL, H Chin, Lim YK, Teo GCJ

ABSTRACT

Malignant germ cell tumour is a rare form of cancer which affects 0.07% of woman globally and they usually occur in the ovaries. Extragenadal sites for germ cell tumours can occur in or near the midline, with the anterior mediastinum being the most common site.

Dysgerminoma is a form of malignant germ cell tumour and extragonadal sites in the retroperineum and anterior mediastinum, albeit rare, have been reported. There has not been any report of dysgerminoma arising from any intraperitoneal structures except for the ovaries to our best knowledge.

We present an unusual case of dysgerminoma presenting as torsion of a mass around a fallopian tube in the presence of two normal ovaries. We discuss dysgerminomas and unusual locations of ovaries and their associated pathology in this report.

Keywords: Dysgerminoma, ectopic ovary, torsion, accessory ovary, germ cell tumour

INTRODUCTION

Malignant germ cell tumour is a rare form of cancer which affects 0.07% of woman globally¹ and they usually occur in the ovaries. Extragenadal sites for germ cell tumours have been reported and the most common site is the anterior mediastinum². Dysgerminoma is a form of malignant germ cell tumour and extragonadal sites in the retroperineum and anterior mediastinum, albeit rare, have been reported³. A literature search using the keywords dysgerminoma, ectopic ovary, accessory ovary, torsion and germ cell tumour was carried out and there has not been any report of dysgerminoma or malignant germ cell tumour arising from any intraperitoneum structure except for ovaries to our best knowledge.

We present an unusual case of dysgerminoma arising in the pelvis in the presence of normal ovaries and the relevant literature review.

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CASE PRESENTATION

A 17-year old woman presented to the emergency room with a history of progressive worsening lower abdominal pain of two months and a sudden exacerbation of pain for two hours. On examination, there was left iliac fossa tenderness with signs of acute abdomen. CT abdomen and pelvis showed a large lobulated mildly enhancing 13 x 12 cm soft tissue density solid mass lesion arising from the pelvis with moderate amount of free peritoneal fluid suggestive of haemoperitoneum. Ultrasound of the pelvis showed a large left adnexal mass demonstrating attachment to a vascular pedicle, suggesting torsion of a pedunculated appendage with haemoperitoneum present. CA 125 was mildly elevated at 55.6U/ml. The other ovarian tumour (AFP, CEA and β hCG) markers were normal.

She underwent laparoscopic left salpingectomy and removal of the adnexal mass on the same day. Intraoperatively, there was a left para-ovarian mass measuring 20x20cm (Figure 1), which had torqued around the left fallopian tube thrice. The left tube was gangrenous. Both ovaries and the right tube were normal. There was one litre of haemoperitoneum. The mass was too large to fit into the lap sac bag for retrieval laparoscopically thus a mini-laparotomy was performed over the right side port to remove the mass from the abdomen. The mass appeared distinctively separate from the left ovary (Figure 2).

Her post-operative recovery was uneventful and she was discharged well on the second post-operative day. Histological examination showed a dysgerminoma comprising sheets of pleomorphic round cells immunoreactive for PLAP (Figure 3), CD117 and D2-40, interposed by fibrous bands containing mature lymphocytes. Focal haemorrhagic infarction indicative of torsion was also present (Figure 4).

Although a full surgical staging was not done at the time of the operation, post-operative CT scan did not have any evidence of intra-thoracic or intra-abdominal malignancy. She was staged as 1a dysgerminoma according to FIGO classification and is on close observation with regular serum lactate dehydrogenase measurement and ultrasound of the pelvis.

DISCUSSION

The para-ovarian mass tightly torqued around the

ipsilateral fallopian tube causing it to be gangrenous and the histological examination confirmed that the mass was loosely adhered to the fallopian tube. As there were two normal ovaries at the end of the surgery and there was no invasion of surface of the tube, the mass arose from something that was clearly separated from the ipsilateral ovary and fallopian tube. CT scan performed after surgery also confirmed the presence of two normal ovaries. The risk of having a malignancy presenting as torsion in a young patient is very low i.e. 1- 2%⁴ thus the diagnosis of dysgerminoma was a surprise. Pre-operative serum LDH was not done because we did not anticipate this diagnosis. The other ovarian tumour markers were normal.

Women with malignant germ cell tumour have a favourable prognosis as they usually present early and respond well to treatment¹. Fertility-sparing surgery with a unilateral salpingo-oophorectomy, peritoneal washings and thorough inspection of the abdominal cavity is now considered standard treatment in early stage germ cell tumour⁵. Surveillance with regular ultrasound can be done for patients with stage 1a dysgerminoma. Although relapse in patients with stage 1 dysgerminoma is around 15-25%, they are very sensitive to platinum-based chemotherapy and salvage rate is high⁵. Chemotherapy using bleomycin, etoposide and cisplatin (BEP) is considered gold standard as adjuvant treatment for women with higher stage disease⁶. Weinberg et al reported a 100% resumption of normal menstruation in all the patients following fertility-sparing surgery and chemotherapy and that fertility does not seem to be affected by the treatment⁶. Dysgerminoma is exquisitely sensitive to radiotherapy but pelvic radiation is associated with gonadal dysfunction and loss of fertility⁵. This patient was discussed at the tumour board in our institution and the decision was not to proceed with an interval salpingo-oophorectomy because the mass did not arise from the normally-placed ovary. It was in fact from a separate structure that was not part of the ovary or fallopian tube.

Extragenital germ cell tumour usually occurs in the midline e.g. anterior mediastinum, sacrococcygeal region and the pineal region⁷. A literature review was carried out but we could not find any reports of dysgerminoma arising from the fallopian tubes or nearby structures in the peritoneal cavity, excluding the ovaries. We were unable to correlate the source of the mass with a usual anatomical structure in the pelvis but we found literature reporting benign and malignant tumours including serous

papillary carcinoma, mucinous cystadenocarcinoma and Brenner tumour arising from ectopic ovaries⁸⁻⁹.

Ectopic ovary is a rare occurrence and its true incidence is unknown. They are often small and can be overlooked or mistaken as lymph nodes during surgeries¹⁰. Ectopic ovary behaves like a normally placed ovary and can respond to ovarian stimulation. In fact, stimulation with clomiphene citrate and looking for follicles has been used to confirm the diagnosis of ectopic ovaries¹¹. The estimated incidence is between 1 in 29,000 and 1 in 700,000 gynaecological admissions but is often thought to be an underestimate¹². It has been reported in the pelvis, on the broad ligament, in the retroperitoneum near the para-aortic area, on the sigmoid colon, on the omentum and intrarenal presenting as a renal mass^{8-9,13}.

Terminology describing this occurrence has been confusing, creating much debate. It was first suggested by Wharton in 1959 to separate the entities of supernumerary ovary and accessory ovary by the location and blood supply of the ovarian tissue. A supernumerary

ovary must be entirely separate from the normally located ovary whereas an accessory ovary is closely related to the normal ovary and is supplied by vessels continuous with those supplying the normal ovary¹⁴. Lachman et al. have suggested using the term ectopic in place of the traditional terms and categorizing them as post-surgical, post-inflammatory, or truly embryological as it has been documented that up to half of the women with additional ovaries have previous surgeries¹⁵.

Congenital anomalies have been frequently reported in women with supernumerary and accessory ovaries. In 36% of reported cases, anomalies of the genitourinary tract, adrenal gland and liver have been documented¹³. We suggest screening all women with ectopic ovaries for associated anomalies especially in the genitourinary system as they occur most frequently there.

Both ectopic ovaries and dysgerminomas are rare events. We hope to emphasize that tumours typically occurring in ovaries can present in unusual place and manner and a high index of suspicion is needed.

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Figure 1: Paratubal mass upon entry into the abdomen

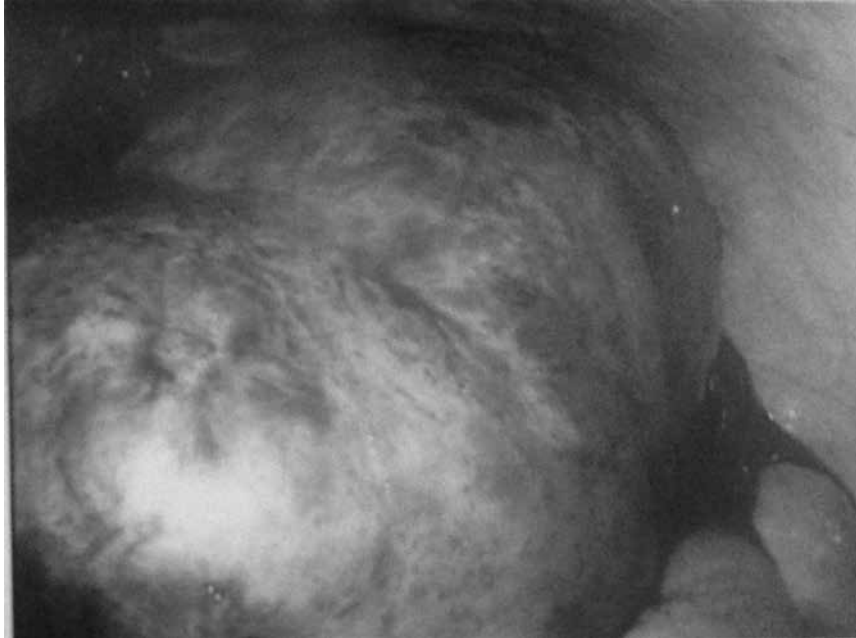


Figure 2: Both ovaries normal after removal of the mass

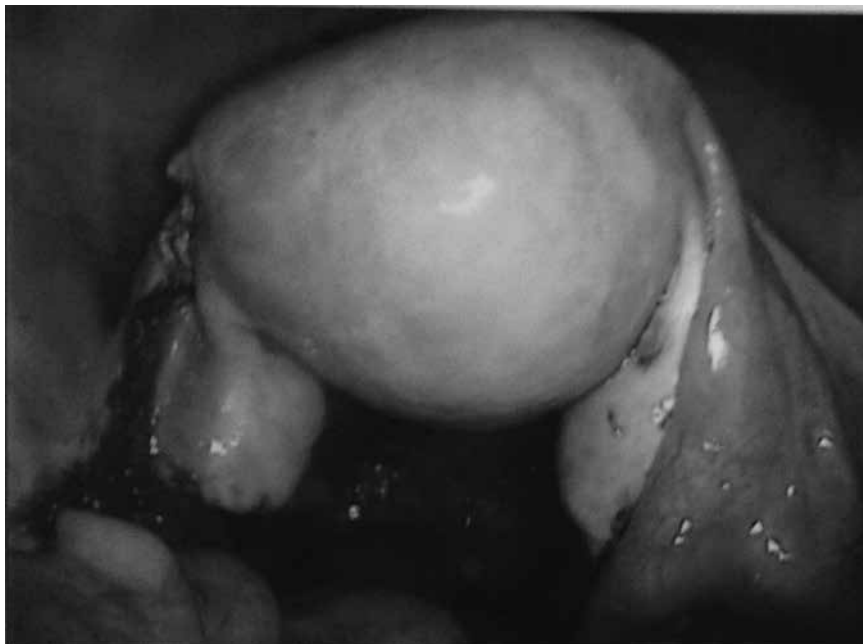


Figure 3: Tumour cells are immunoreactive for PLAP (x 400)

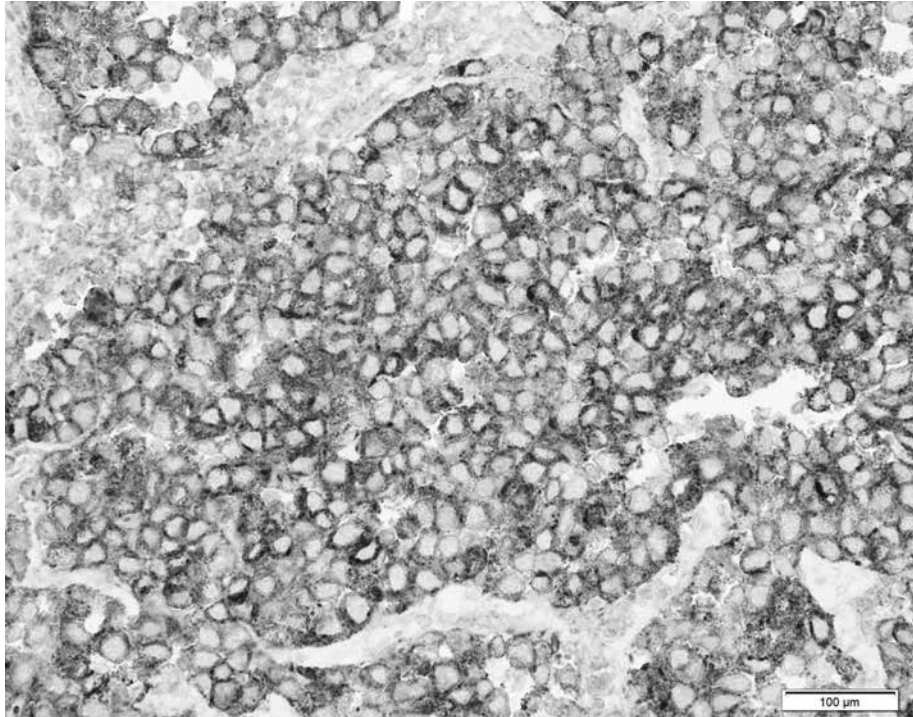
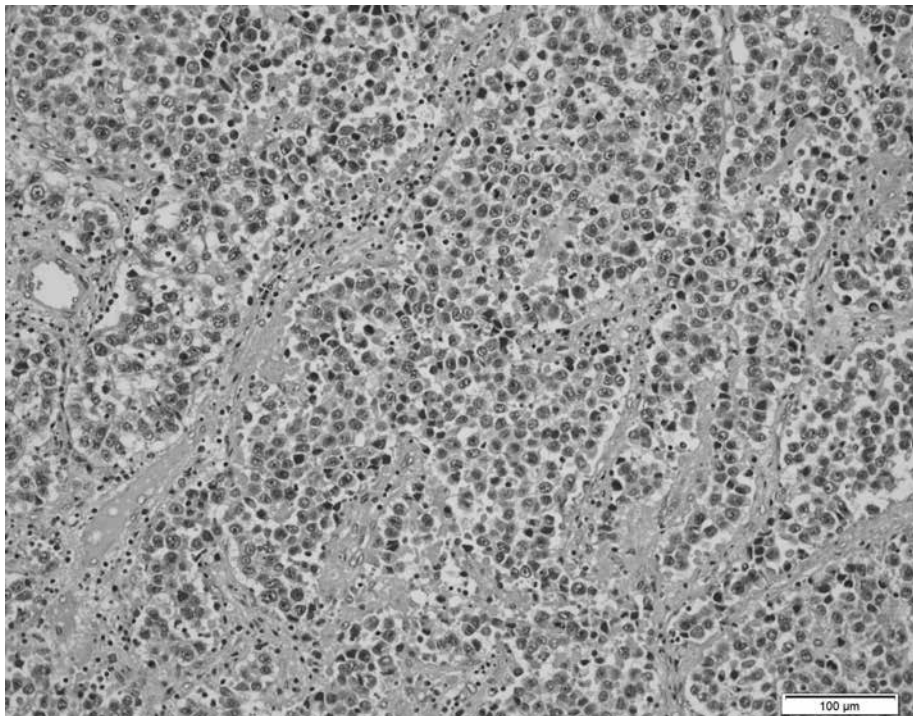


Figure 4: Dysgerminoma with sheets of round pleomorphic cells separated by fibrous bands with mature lymphocytes (H&E X 200).



Confined Placental Mosaicism: A Case Report of Monosomy Chromosome 21

Ng KL, Chin HC

ABSTRACT

We report a case of confined placental mosaicism of a 34 year old Chinese woman who was found to be at high risk during first trimester screening. Subsequent chorionic villus sampling showed mosaic monosomy chromosome 21, but amniocentesis revealed normal karyotype. The rest of her antenatal, intrapartum and postpartum progress were uneventful. Her child has normal phenotype, growth and developmental milestones thus far.

Keywords: monosomy mosaicism, chorionic villus sampling

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INTRODUCTION

Chorionic villus sampling (CVS) and amniocentesis are the most common invasive prenatal diagnostic procedures performed worldwide in modern obstetrics and gynecological practice today. In majority of pregnancies, chromosomal abnormalities detected in the fetus are also present in the placenta. However, approximately 1 to 2% of viable pregnancies subjected to CVS testing have been shown to exhibit the cytogenetic abnormality in the placenta only¹ – giving rise to the term confined placental mosaicism (CPM). In this case report, we present a patient diagnosed antenatally with CPM of monosomy chromosome 21 who went on to deliver a normal child.

CASE DESCRIPTION

A 34-year old Chinese female, gravida 3 para 1 with 1 previous miscarriage and 1 full term normal vaginal delivery, was seen early in her current pregnancy in our outpatient specialist clinic. She had no significant past medical or surgical history, and her previous pregnancy was uneventful with no history of intrauterine growth restriction.

Ultrasound dating was done at 9.8 weeks and this was followed by a first trimester screening at 12.3 weeks, which revealed that she was at high risk for trisomy 13

(1:22), trisomy 18 (1:355) and trisomy 21 (1:103). She was hence counseled for and agreed to a chorionic villus sampling (CVS), which was performed at 13.1 weeks of gestation. Cell cultures were unsuccessful and interphase fluorescence in situ hybridization (FISH) was performed using DNA probes for chromosomes 13, 18, 21, X and Y. The result showed one signal for chromosome 21 in 20% of the 50 nuclei examined, suggestive of mosaic monosomy chromosome 21. In view of this, an amniocentesis was done at 17.1 weeks of gestation, which studied an additional 43 metaphases (total of 59 metaphases) to check for monosomy 21. None were found. This excluded a mosaic of 5% or more with 95% confidence; thus the final report was that of a male karyotype with no apparent chromosomal abnormalities. There was no fetal abnormality seen during ultrasound screening at 19.1 weeks. The rest of her antenatal follow up was uneventful with normal ultrasound growth parameters throughout.

The patient went into spontaneous labour at 38 weeks of gestation and progressed to a vaginal delivery of a normal baby boy with birth weight 3045 grams, who was reviewed by the neonatologist and noted to have no abnormal phenotypic features. He was discharged well with the patient the following day. The placenta weighed 625 grams. Subsequent follow up of the neonate has revealed normal postnatal growth and developmental milestones at 6 weeks of life.

DISCUSSION

First described in term placentas of infants born with unexplained intrauterine growth restriction (IUGR) by Kalousek and Dill² in 1983, CPM is defined by the presence of two or more different cell lines affecting the placenta only. Clinically, the diagnosis is typically made after a second prenatal test (e.g. amniocentesis) is done following an abnormal first test (e.g. CVS), and confirms a normal diploid karyotype. The prenatal identification of CPM can also be verified at birth by investigation of the term placenta. It is known that the fetus is involved in about 10% of CPM cases.³

There are 3 types of CPM, whereby placental mosaicism is confined to cytotrophoblast (type I), chorionic stroma (type II) or both cell lineages (type III).⁴ It can also be described as mitotic or meiotic – in which the former arises from a diploid conception and the latter from a viable dividing chromosomally abnormal zygote. It is important to note the association between meiotic CPM involving trisomy and the increased risk of fetal

uniparental disomy (UPD) for that specific chromosome pair⁵, which may also adversely impact intrauterine growth of the fetus. In rare cases of UPD 21, there is usually an absence of defining phenotypic features.⁶ Examples of CPM described in the existing literature include trisomies 2, 3, 7, 13, 18, 20, 21, with 16 being the most common.^{1,7} Sex chromosomes, when affected, usually carry no adverse effects on fetal development.⁸ Monosomy CPM such as our case has been infrequently reported.

CPM has been associated with a spectrum of outcomes, ranging from normal pregnancies to IUGR and even intrauterine death (IUD). It has been shown that the outcomes depend upon the type of CPM and particular chromosomal involvement.⁹⁻¹⁰ Type I has been reported to be associated with spontaneous abortion, IUGR, IUD, or perinatal morbidity in 22% of affected pregnancies. Type II is usually found in pregnancies with normal fetal outcomes. Type III is typically associated with high rates of IUGR or IUD, with the latter mostly linked to CPM 16. One of the hypotheses is that CPM results in abnormal growth of the placenta, which in turn compromises placental function and leads to IUGR.¹¹⁻¹³ Our patient had a placenta weighing 625 grams that is at the 50th centile based on Thompson JMD.¹⁴ This justifies the normal fetal growth in our case report as the placenta growth and function were likely to be normal. However, the true mechanism behind how abnormal cells in the placenta influence fetal growth parameters or even cause IUD has yet to be elucidated. This is especially so as not all prenatally diagnosed CPM result in live births. Thus, to further the understanding and efficiency of CPM detection, it has been suggested that only placentas from idiopathic IUGR pregnancies with no obvious maternal, fetal and placental causes should be thoroughly analyzed. This is to facilitate the correlation between extent of aneuploid involvement in the term placenta and pregnancy course and outcome.⁴

Fortunately, the prenatal diagnosis of CPM has been shown to have no links with increased risk of birth defects or developmental problems, with a study by Miura et al¹⁵ noting no significant difference in developmental quotient at 12 months of age between CPM infants and the control group. However, reduced postnatal growth and short stature were seen more frequently in the CPM group.¹⁵

More large prospective trials with long term follow ups are needed to determine the true role of CPM in intrauterine, perinatal and postpartum periods. At

present, we recommend that all prenatally diagnosed CPM pregnancies be followed up closely with serial ultrasound monitoring of growth parameters. Given the trend of increasing maternal age, more widespread first trimester screening and improved laboratory

techniques of invasive prenatal testing, it is imperative that obstetricians incorporate multidisciplinary care involving the geneticist and pediatrician – and all involved will face unique challenges in the counseling of patients diagnosed with CPM.

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*OGSS Annual Oration & Banquet
28 October 2014, The Ballroom, Raffles Hotel, Singapore*



Opening address at the OGSS Annual Oration & Banquet by OGSS President, Dr Tony Tan



Dr June Tan presented the Introduction and History of the OGSS Annual Oration & Banquet



Orator at the OGSS Annual Oration & Banquet, the Honourable The Chief Justice Sundaresh Menon presented his speech, "Evolving Paradigms for Medical Litigation in Singapore"



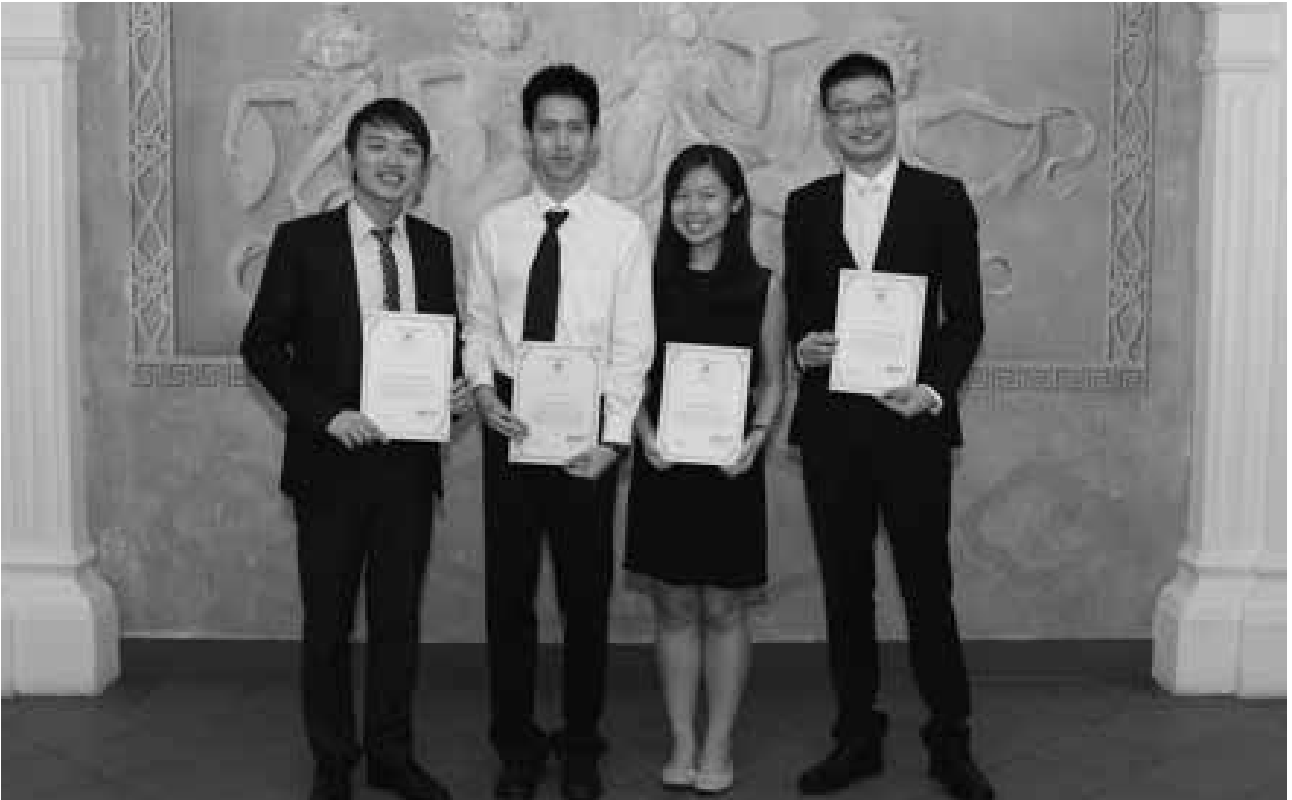
President of the Obstetrical & Gynaecological Society of Singapore, Dr Tony Tan presented Chief Justice Sundaresh Menon with a commemorative plaque and gold plated medal



Chief Justice Sundaresh Menon viewing the graphic recording by Dr Lim Su Min (left) with OGSS President Dr Tony Tan (right) looking on



(L-R) A/Prof Ho Tew Hong, Dr Tony Tan, Chief Justice Sundaresh Menon, Dr Lim Su Min, Dr June Tan & Prof Tan Kok Hian



**SS Ratnam Book Prize Winners at the OGSS Annual Oration & Banquet –
(L-R) Mr Leow Yau Guang, Mr Oon Meng Liang, Ms Tham Kar Mun & Mr Tay Wei Rong, Benjamin**



**OGSS members (L-R): Dr Anne Hagarty, Dr Kek Lee Phin, Dr Selina Chua, Dr Lim May Li,
Dr Chia Yee Tien, Dr Ann Tan, Dr Yeoh Swee Choo and Dr Kelly Loi**



The Honourable Chief Justice Sundaresh Menon (L) was greeted upon his arrival at Raffles Hotel by OGSS Honorary Treasurer, Dr K Devendra and Dr Lim Yong Kuei (R) , Honorary Secretary of the OGSS



Members & guests at the OGSS Annual Oration & Banquet



(L-R) Prof Tan Kok Hian, Chief Justice Sundaresh Menon, Prof Yong Eu Leong & Dr Lim Su Min



OGSS Council Members for Term 2013-2014
Standing (L-R): Dr Ng Ying Woo, Dr Natalie Chua, Dr Celene Hui, Dr June Tan, Dr Irene Chua,
Dr Jasmine Mohd, Dr Tan Eng Kien
Sitting (L-R): Dr Lim Min Yu, Dr K Devendra, Dr Tony Tan, Dr Lim Yong Kuei

*Public Forum: Victorious Living, Empowering Your Pregnancy
12 April 2014, Raffles City Convention Centre*



Dr Lai Fon-Min talked about “What You Need To Know About Writing a Birth Plan” at the Public Forum



OGSS President, Dr Tony Tan’s topic was, “First Trimester Screen - For Prediction of Chromosomal Abnormalities, Pre-eclampsia & Intrauterine Growth Restriction”

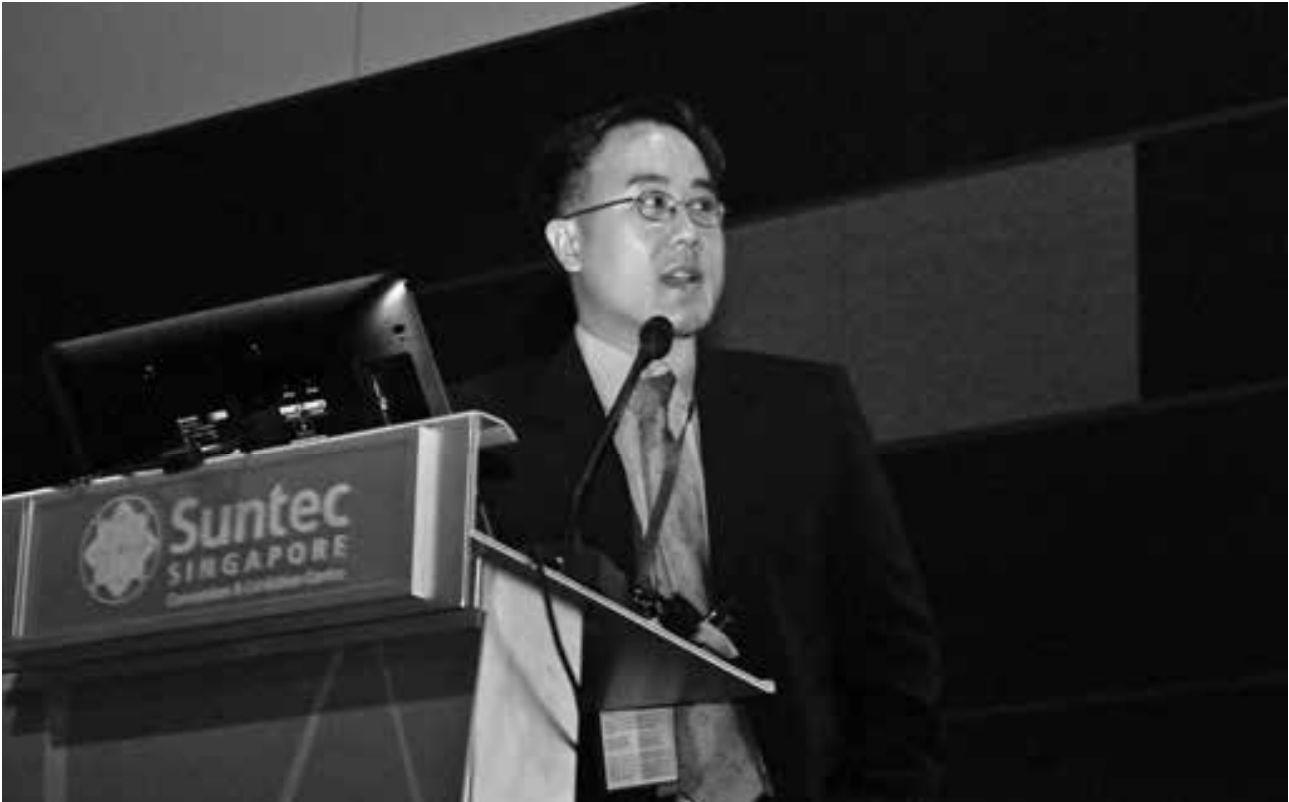


"Is Down Syndrome Testing safe for my baby? Latest new safer options now available"
was presented by A/Prof Mahesh Choolani



The well attended public forum: Victorious Living, Empowering Your Pregnancy,
was held at Raffles City Convention Centre

*10th Asia Pacific Congress in Maternal Fetal Medicine
22-24 August 2014, Suntec City & Convention Centre*



Speakers at the 10th APCMFM Congress, A/Prof Tuangsit Wataganara from Thailand (above) and (below) Prof Sir Arulkumaran Sabaratnam from UK with Prof Leung Tak Yeung, Co-Chairman of the 10th APCMFM from Hong Kong





Prof Jonathan Hyett from the Royal Prince Alfred Hospital, Sydney was one of the many eminent speakers at the 10th APCMFM Congress held at the Suntec Singapore Convention & Exhibition Centre



Participants and Speakers at the 10th APCMFM



Some OGSS members who attended the 10th APCMFM at Suntec Singapore Convention and Exhibition Centre, Singapore, 22-24 August, 2014.



The 10th APCMFM Co-Chairman, Dr Tony Tan with Prof KH Tan and Prof Sir Arulkumaran Sabaratnam

Inside Front Cover:

10th Asia Pacific Congress in Maternal Fetal Medicine, 22-24 August 2014

(L-R) OGSS Honorary Treasurer, Dr K Devendra, Dr Tony Tan, Co-Chairman of the 10th APCMFM, guest-of-honour, Dr Lam Pin Min (Designated Minister of State for Health, Ministry of Health, Singapore) and OGSS Vice President, Dr Tan Lay Kok

Inside Back Cover:

Reflective graphic recording of Chief Justice Sundaresh Menon's Oration by Dr Lim Su Min.

Reflective graphic recording involves capturing people's ideas and expressions - in words, images and colour - as they are being spoken in the moment.

Back Cover:

OGSS Annual Oration & Banquet, 28 October 2014

Standing from left: Dr Lim Min Yu, Dr Natalie Chua, Dr Celene Hui, Dr Ng Ying Wu, Dr June Tan, Dr Irene Chua, Dr Jasmine Mohd, Dr Tan Eng Kien

Seated from left: Dr k Devendra, Chief Justice Sundaresh Menon, Dr Tony Tan, Dr Lim Yong Kuei

SINGAPORE JOURNAL OF OBSTETRICS AND GYNAECOLOGY

INFORMATION FOR AUTHORS

The Singapore Journal of Obstetrics & Gynaecology is the official Journal of the Singapore Obstetrical & Gynaecological Society. It provides a medium for the publication of original articles related to Obstetrics & Gynaecology in all its aspects. It also provides a source for continuing medical education for both the members of the Society and those members of the medical profession of Singapore who have an interest in any part of the discipline.

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Articles are accepted on the understanding that they have not been accepted or submitted simultaneously elsewhere in this or a similar form, and that a substantial part of the material contained in the article has not been published elsewhere. In the matter of multiple publications please see the British Medical Journal 1984; 288:52. For guidelines, on authorship please see the British Medical Journal 1985; 291:722. It is assumed by the Editor and his committee that articles are submitted with the approval of all co-authors involved. The opinions expressed in any paper are those of the authors and the Editorial Committee does not necessarily agree with them, nor are they unless explicitly stated the official views of the Singapore Obstetrical and Gynaecological Society.

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