Background Paper to the Health Select Committee on the use of Surgical Mesh in Aotearoa New Zealand

Prepared by:

Dr Sandra Hall

Policy Analyst

Women's Health Action Trust

PO Box 9947

Newmarket

Auckland 1149

Women's Health Action Trust

Women's Health Action is a women's health promotion, information and consumer advisory service. We are a non-government organisation that works with health professionals, policy makers and other not for profit organisations.

Women's Health Action is in its 30th year of operation and remains on the forefront of women's health in Aotearoa New Zealand. We provide evidence-based analysis and advice to health providers, NGOs and DHBs, the Ministry of Health, and other public agencies on women's health (including screening), public health and gender and consumer issues with a focus on reducing inequalities. We have a special focus on breastfeeding promotion and support, body image, women's sexual and reproductive health and consumer rights.

Background

In Aotearoa New Zealand and internationally, significant numbers of women and men have experienced complications ranging from moderate discomfort to disabling pain and severe tissue damage as a result of surgical mesh implants.

Surgical mesh is generally used to repair weakened or damaged tissue. It is used in place of, or in addition to sutures and is made from porous absorbable or non-absorbable synthetic material or absorbable biologic material. In urogynaecological procedures, surgical mesh is permanently implanted to reinforce the weakened vaginal wall to repair pelvic organ prolapse or to support the urethra to treat urinary incontinence. Surgical mesh is also used for colorectal and hernia repairs and in breast reconstruction surgeries.

First developed in the 1950s for hernia repair, by the 1990s surgical mesh was rapidly adopted and promoted by many gynaecologists within Europe and later the USA despite being backed by limited research data and no reliable clinical trials. Initially utilized for treatment of SUI[1], as its use became more common doctors and device makers pushed to make broader use of it. A few years later, the US Food and Drug Administration (FDA) agreed to let manufacturers sell mesh to treat a more complex condition: pelvic organ prolapse[2].

Despite early reports which noted significant complications including buttock pain, vaginal erosion, bladder erosion and serious infection[3], meshes have been used for the repair of uterine and vaginal wall prolapse (pelvic organ prolapse or POP), urinary incontinence and colorectal surgery in many countries including Aotearoa New Zealand for more than a decade now.

By 2008, prompted by increasing numbers of reports of complications, the FDA began issuing safety warnings regarding the urogynaecological use of mesh. These warnings have continued and in 2011 the FDA stated it had serious concerns over the use of mesh for the treatment of vaginal prolapse and incontinence,[4] noting that existing studies supporting its use were poorly designed and documented, and research timeframes too short to establish clear proof of its effectiveness.

A number of women's organisations and consumer groups in Aotearoa New Zealand began calling attention to the adverse effects of surgical mesh by 2010. The post-surgical complications recorded from mesh use include erosion through the vaginal epithelium, infections, severe pain, urinary problems, recurrence and/or incontinence, bowel, bladder and blood vessel perforation during insertion. Mesh is designed to become incorporated

[1] Stress urinary incontinence (SUI) is a leakage of urine during moments of physical activity that increases abdominal pressure, such as coughing, sneezing, laughing, or exercise. SUI can happen when pelvic tissues and muscles, which support the bladder and urethra, become weak and allow the bladder "neck" (where the bladder and urethra intersect) to descend during bursts of physical activity. This descent can prevent the urethra from working properly to control the flow of urine. - from US FDA-Medical Devices at http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/ImplantsandProsthetics/UroGynSurgicalMesh/ucm284109.htm.

[2] Pelvic-organ prolapse is characterized by a downward descent of the pelvic organs, causing the vagina to protrude, and afflicts millions of women worldwide and is increasingly recognized as a global burden on women's health. - in Kenton K, Mueller ER. The global burden of female pelvic floor disorders. BJU Int 2006;98:Suppl 1:1-5.

[3] Scientific Impact Paper No. 19 3 of 5 © Royal College of Obstetricians and Gynaecologists.

[4] FDA 2011 Urogynecologic *Surgical Mesh: Update on the Safety and Effectiveness of Transvaginal Placement for Pelvic Organ Prolapse*.

with the body's natural tissue and therefore removal may not always be possible, or may require multiple surgeries.[5]

Worldwide cases related to treatment injuries from mesh, including in the US, the UK and Australia now number in the thousands[6]. The FDA reported that neuromuscular problems, vaginal scarring or shrinking, and three deaths have been directly related to mesh replacement and now encourage health care providers to recognise *"that in most cases, POP can be treated successfully without mesh, thus avoiding the risk of mesh-related complications."*[7]

Women's organisations and consumer groups in Aotearoa New Zealand were also criticising the process which enables certain types of medical devices, including surgical mesh, to be approved for use by the FDA or a similar body and marketed without having to undergo clinical trials.[8] Surgical mesh kits are mostly Class II B (see Appendix 2) devices and as such there is no requirement for this type of medical device to be approved by any overseas medical device regulator before they can be supplied in New Zealand[9].

When Women's Health Action approached Medsafe in 2013 and again in 2014 they maintained mesh was safe and the problem was not with the product, and issues only occurred when it was incorrectly used based on the results of a review they conducted in 2008 (see Appendix 1 for Medsafe's 2008 review). In 2014 Medsafe advised Minister Ryall that, *"surgical mesh products available in New Zealand are manufactured overseas and have met requirements set by reputable regulators in countries with premarket assessment systems"*[10].

However, the use of mesh for gynaecological and colorectal surgeries in particular is not supported by research. Local surgeons, even those who approve of some mesh use, have also questioned the approval process and suggest because of success in abdominal wall repairs, manufacturers and the FDA wrongly assumed mesh could also be used for genital prolapse in women, *"Mesh in the abdomen behaves very differently to the mesh in the vagina, which is never sterile...They* [the FDA] *assumed it would work the same so they approved it without proper research and clinical trials"*[11].

Indeed, recent studies suggest that both where mesh is used and who uses it is of concern. The Royal College of Obstetricians and Gynaecologists UK argues less evidence exists for the use of mesh materials transvaginally and stricter governance needs to be employed in the introduction of techniques for mesh repair. They argue that with the current state of knowledge, mesh surgery should only be carried out under carefully controlled circumstances, ideally under trial conditions, and if this is not possible they should be introduced as part of a registry. They state that these procedures should only be carried out

[5] Nygaard I, Brubaker L, Zyczynski HM, et al. Long-term Outcomes Following Abdominal Sacrocolpopexy for Pelvic Organ Prolapse. JAMA. 2013;309(19):2016-2024.

[6] For example: About 20,000 lawsuits filed against mesh manufacturer American Medical Systems Inc. settled for about $830 million, according to a news release from Endo Health Solutions, which bought AMS in 2011. http://www.wvgazette.com/article/20140501/GZ01/140509972#sthash.le3JokzO.dpuf

[7] FDA 2011 Urogynecologic *Surgical Mesh: Update on the Safety and Effectiveness of Transvaginal Placement for Pelvic Organ Prolapse*.

[8] http://nationalwomenshealth.adhb.govt.nz/language/en-nz/health-professionals/general.

[9] NZ Medicines Act 1981

[10] Letter to Women's Health Action from Minister Tony Ryall.

[11] Nygaard I, Brubaker L, Zyczynski HM, et al. Long-term Outcomes Following Abdominal Sacrocolpopexy for Pelvic Organ Prolapse. JAMA. 2013;309(19):2016-2024.

by gynaecologists with special expertise in the surgical management of pelvic organ prolapse[12].

Similarly, the Royal Australian and New Zealand College of Obstetricians and Gynaecologists acknowledge FDA warnings about mesh but supports its use, suggesting post-operative care, rather than the mesh itself, may be the cause of complications[13]. Information published by the College emphasises the importance of specialist training for operating surgeons, informed consent including discussion of alternatives, and for surgeons to be up-to-date on the latest practice literature and potential complications. The College suggests that when mesh is used in newer procedures it should only be in the context of a conducted clinical trial with proper ethics and consent procedures. Sadly, journal articles, media reports and our contact with women who have experienced complications suggest that this advice is not always followed[14].

Women's Health Action has continued to review the research and monitor developments overseas. In early May 2014, the U.S. Food and Drug Administration issued two proposed orders to address the "*health risks associated with surgical mesh used for transvaginal repair of pelvic organ prolapse (POP). The orders would reclassify surgical mesh for transvaginal POP from a moderate-risk device (class II) to a high-risk device (class III) and require manufacturers to submit a premarket approval (PMA) application for the agency to evaluate safety and effectiveness"*[15].

In the past year Women's Health Action has approached Medsafe, ACC, the Health and Disability Commission, and the College of Obstetricians and Gynaecologists to find out more about the use of mesh in Aotearoa New Zealand, incidents related to its use, and to raise our concerns. We found that there is no consistent monitoring of its use, communication between these organisations regarding adverse events is not mandatory, and a definition of an adverse event is not consistent. Conflicting views about the problems related to these products has meant no one agency is taking the lead for monitoring or controlling its use and providing accessible information for consumers about treatment outcomes. In addition, our request that mesh be monitored more closely has not been successful[16].

ACC has now received over 400 hundred claims relating to mesh in various types of surgery, however they also told us they do not routinely report even the accepted claims as adverse events to Medsafe, the HDC or the HQSC. In addition, approximately one third of the claims were rejected as treatment injury is often problematic since time delays and complications that affect other areas of the body may make it hard to prove a link between the symptoms and the mesh surgery. ACC does not appear to collect information on the clinicians who performed the surgeries which gave rise to the claims or give any feedback to the relevant health service.

The HDC has met with Women's Health Action and consumer representatives on two occasions. They have told us they will investigate further and meet with the consumer

[12] RANZCOG College Statement: C-Gyn 20

[13] http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10841865

[14] http://www.3news.co.nz/Surgeon-used-mesh-without-womans-consent/tabid/423/articleID/342298/Default.aspx%23ixzz30XyxMGYA

[15] See appendix 3 for full text

[16] For example, when ACC were asked if they routinely inform the treatment provider, particularly if more than one claim is made, they responded that they do not but do "share treatment injury information with the health sector" including adverse event notifications to the MOH. These are made on a monthly basis. They do not notify professional bodies unless peer clinical advice is received criticising practice. They do not contact HDC. No records are kept about claims against individual practitioners.

representatives in two months but are not currently engaged with the other agencies around monitoring mesh.

In early 2014 Medsafe advised us that their current views on mesh use was informed by the 2008 review and as far as we could find have conducted no further reviews. They currently classify most meshes as Class II B (see Appendix 2 for classification examples) which we think is inappropriate for any device that is implanted in human tissue. Despite Medsafe's view that any problem lies with the clinicians, there is no system in place which monitors individual clinicians or variations in surgical procedures that might contribute to an adverse event.

The HQSC advised Women's Health Action that they felt the responsibility for ensuring the safe use of gynaecological mesh lay with the RNZCOG[17] despite their stated intent of *"working towards a common list of serious adverse events shared by ACC, the Ministry of Health, the Health and Disability Commissioner and the Commission by 30 June 2014"*[18].

We also contacted the RANZCOG and their mesh spokesperson, Professor Malcolm Frazer, who has provided us with the most recent guidelines for the use of mesh in New Zealand and Australia (see Appendix 5). We note there is no requirement for clinicians to follow this advice and the College does not appear to have a monitoring system in place.

While one DHB states it has developed an informed consent process and is limiting its use of mesh[19], we could find no evidence this is happening elsewhere including in the private health system, and consumers continue to report a lack of specific informed consent processes where short and long term risks are discussed along with alternatives. A number of the women we spoke with report not being warned about possible complications and risks by their surgeons, and finding insufficient up to date information on the Medsafe website about mesh or the risks. Nor are there currently any registers of qualified practitioners or mandatory training requirements for use of the product which the RANZCOG says should only be undertaken by surgeons with additional training.

However, following the recommendation of Honourable Tony Ryall in correspondence to Women's Health Action in May 2014, we will be contacting RANZCOG to discuss a specific informed consent process for surgical mesh and the benefits of establishing a publicly available register of surgeons trained in the surgical mesh procedure.

Concluding summary

Despite the continued overseas reports of significant complications, increasing concern expressed by the FDA (see Appendix 3 for the most recent FDA advice), questioning by increasing numbers of consumers, women's organisations and many medical professionals, and growing complaints, mesh is still being implanted in hundreds of New Zealanders and is being adapted for use in other surgical procedures, such as breast reconstruction.

While some patients will experience no side effects, the women we talked to told us the effects of complication from the use of surgical mesh can be long term and life changing. There are also clear and specific concerns documented in the conventional medical literature. While the extent of harms and complications from the use of mesh, particularly in

[17] Personal communication to Women's Health Action by Alan Merry
[18] https://www.hqsc.govt.nz/assets/General-PR-files-images/Statement-of-Intent-2013-2016-final.pdf page 18.
[19] Personal communication Dr Carolyn Billborough ADHB

gynaecological surgery, continue to be debated, what is clear is that there are significant consumer protection issues that need to be addressed including robust and specific informed consent processes about the risks involved and the alternatives available.

In Aotearoa New Zealand use of these types of medical devices is not specifically monitored and neither the number of successful procedures nor the number of adverse outcomes is known. Mesh is used in a variety of surgeries for variable complaints by an unknown number of health care services. Consumers who have suffered treatment injuries include men and women and a range of age groups, one as young as 18[20]. There is currently a complete lack of information about whether the location of the surgery, the severity of the complaint, the type of procedure used to insert the mesh, the type of mesh or mesh kit used, the brand of mesh used or the clinicians involved contributed to treatment injuries in Aotearoa New Zealand. We think this is particularly concerning given that these devices which are implanted in the human body were never tested prior to their release, are known to have caused serious and disabling injuries in hundreds of cases and have been subject to a FDA warning since 2008[21]. If information about the effectiveness of medical devices is not necessarily based on robust clinical trials or approval processes, how can health care consumers tell which products have been properly tested and approved and which have not?

Because our legislation regarding medical devices does not require prior testing or ongoing monitoring, the use of surgical mesh in New Zealand appears to be another unfortunate experiment which has had significant, and in some cases, serious consequences on women's health in particular. Many of the health effects are not obvious for some months or even years.

We ask that you investigate the approval and monitoring processes[22] for this and other similar devices, the processes ACC uses in assessing claims for treatment injuries caused by mesh and the informed consent processes[23] undertaken by both private and public health services.

We urge this committee to take the following urgent action:

- Medsafe be required to provide evidence of testing and evidence based peer-reviewed research that established the product's safety particularly in urogynaecological and colorectal surgery, or to consider withdrawing mesh products from the market until better evidence about their safety is provided and monitoring systems are in place.
- A register is established of all New Zealand mesh surgeries to monitor the short and long term outcomes of each use of surgical mesh. There is a precedent for this in the Mirena study and in the hip joint register both of which evaluate the short and long term effects of these medical devices

[20] http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10843419

[21] The FDA 2011 review of adverse event reports and the scientific literature showed that "transvaginal POP repair with mesh does not improve symptomatic results or quality of life over traditional non-mesh repair". And FDA 2011 Urogynecologic *Surgical Mesh: Update on the Safety and Effectiveness of Transvaginal Placement for Pelvic Organ Prolapse*. The same review revealed that mesh erosion can require multiple surgeries to repair and can be debilitating for some women. In some cases, even multiple surgeries will not resolve the complication.

[22] Medsafe conducted a review of reports of adverse events related to mesh in 2008 finding that erosion was a common problem and recommending better training and informed consent processes. Medsafe's numbers of adverse outcomes is much lower than numbers of ACC claims and information is not shared. They list only 17 adverse events over this period.

[23] See FDA recommendations for Health Care Providers: As stated in the Oct. 20, 2008 Public Health Notification

- ACC be required to conduct an independent audit of all mesh related claims and the way in which ACC has defined 'treatment injury" in this context and to report all existing and future claims to Medsafe as adverse events
- The Medical Council and the Royal College of Obstetricians and Gynaecologists be required to ensure the qualifications and experience required of surgeons using mesh are made clear to the public via a specialist registry along with warnings about risk and alternatives that can be clearly understood by non-health professionals. In addition they be required to use a specific informed consent process and assessment procedure
- The HQSC be required to ensure all relevant agencies (ACC, HDC, HQSC and Medsafe) share information about treatment injuries and adverse events as stated in the HQSC document [24]
- Medsafe's process for approving and classifying medical devices and providing up to date information also requires further examination. In particular, whether Medsafe's approval procedures for medical devices in Aotearoa New Zealand should ever rely solely on overseas evidence.

Thank you for this opportunity to provide a background paper on this important health issue.

[24] https://www.hqsc.govt.nz/assets/General-PR-files-images/Statement-of-Intent-2013-2016-final.pdf

Appendix 1: *Surgical Mesh for Uro-Genital Report Adverse Event Reports*

November 2008 -Downloaded from Medsafe Website 4/5/2014:
Medsafe has received a number of medical device adverse event reports relating to several brands of surgical mesh implants used for uro-genital repair. Medsafe seeks MDIRC's guidance on what would be the most appropriate response to these reports.

Background
Since 2006 Medsafe has received 14 adverse event reports relating to complications resulting from the use of surgical mesh implants for the continence and pelvic repairs. All of these events have been reported via the New Zealand Accident Compensation Corporation (ACC). The events have occurred at a mixture of public and private hospitals (11 in total) over a wide geographical area. Only one hospital is involved in more than one adverse event, with three (3) events reported. Before the events were referred to Medsafe they were reviewed by the ACC Harm Panel. The panel advised that it viewed the events as "serious with a moderate likelihood of recurrence." These events have not previously been reported to MDIRC as they have been subject of an on-going study by Medsafe.

Adverse Event Summary
The table below summarises the main details of the events reported.

Date of Event	***Injury***	***Brand***	***Device***	***Model***	***Batch***
30-Oct-2005	*Rectal damage/tear*	*American Medical System*	*SPARC Sling*	*72403657*	*375289008*
03-Mar-2006		*Vaginal damage/tear*		*Unable to obtain Information*	
19-May-2006	*Vaginal damage/tear*	*American Medical System*	*Apogee System with InterPro*	*72404025*	*447138028*
5-Jul-2006	*Vaginal damage/tear*	*Johnson & Johnson Medical*	*Gynaecare TVT*	*810041B*	*1319566*
15-Jul-2006	*Vaginal damage/tear*	*American Medical System*	*Perigee System with IntePro*	*72404046*	*424923013*
19-Jul-2006		*Vaginal damage/tear*		*Unable to identify patient at the reported hospital*	
19-Jul-2006	*Procedural complications*	*Johnson & Johnson*	*Gynaecare TVT*	*810081*	*2906367*
14-Sep-2006		*Vaginal damage/tear*		*Information not recorded*	
11-Dec-2006	*Vaginal damage/tear*	*Johnson & Johnson Medical*	*Gynaecare Gynaemesh PS*	*GPSL L02*	*XBE363*
18-Jan-2007	*Urinary retention*	*Johnson & Johnson Medical*	*Gynaecare Gynaemesh PS*	*GPSL*	*XAD746*
25-Jan-2007	*Vaginal damage/tear*	*Johnson & Johnson Medical*	*Gynaecare Gynaemesh PS*	*GPSL*	*XAD746*
11-Oct-2007	*Vaginal damage/tear*	*Labastide Rouairoux*	*THT81270*	*504904*	
13-Mar-2008	*Vaginal damage/tear*	*Johnson & Johnson Medical*	*Gynaecare Gynaemesh PS*	*810081*	*1307149*
4-Apr-2008	*Vaginal damage/tear*		*TVT Prolene*	*Unable to obtain information*	

Product Information
The Royal Australian and New Zealand College of Obstetricians and Gynaecologists issued a statement entitled "The Use of Mesh in Gynaecological Surgery (Ref C-Gyn 20)" in July 2007. The statement noted that there was now a wide range of prosthetic materials available for the treatment of pelvic organ prolapse and that there are potential major complications in

the use of mesh in the management of pelvic organ prolapse. The instructions for use accompanying the AMS SPARC Sling System notes that erosion through the surrounding tissue and migration of the device from the desired location are known risks with the product. Johnson & Johnson Medical issued similar advice about the potential for adverse reactions of erosion and extrusion in their instructions for use for the Gynaecare Gynaemesh PS product.

Literature Review

The use of vaginal meshes has been in advance of surgical management of women with POP (pelvic organ prolapse) syndrome (Segev Y. et al, 2008). Although the use of vaginal meshes has become a new effective method of pelvic organ prolapse surgery clinicians should be aware of the various post-operative complications, including mesh-related infections. (Falagas M.E. et al, 2007).

The January 2002 issue of "OB/GYN News" published an article entitled "Tension-Free Vaginal Tape: Follow the Rules". It stated "Mesh protrusion is the most common TVT complication. It's a technical error, often due to inadequate suturing, improper passage of the tape through the anterior vaginal wall, or premature resumption of sexual activity. Careful technique in needle passage and wound closure should prevent most cases of this. Treatment includes antibiotics and a minor plastic surgery procedure to trim and cover the tape with healthy epithelium." The incidence of mesh-related complications, such as mesh-related infections and erosion varies substantially from 0 to 8% and 0 to 33%, respectively (Falagas M. E. et all, 2007; Stepanian A.A. et al, 2008). Surgical correction of the disorder can be performed through either the abdominal or transvaginal approaches.

Prospective randomized trials have compared these approaches demonstrating better anatomic success for the abdominal approaches as opposed to faster recovery and lower morbidity for the transvaginal approach. Laparoscopic and other transvaginal minimal access techniques have recently been advocated utilizing synthetic or biological adjuvant grafts. These techniques have been associated with high success rates albeit substantial graft complications such as erosion, contraction and dyspareunia. (Segev Y. et al, 2008).

Risk factors for this condition include obesity, previous vaginal deliveries and hysterectomy, and genetic predisposition leading to reduce connective tissue and muscle strength (ibid). Various factors influence the development of vaginal mesh-related complications such as the kind of biomedical materials (e.g. filament structure, pore size) of the mesh, the type of procedure, the preventive measures taken, and the age and underlying co-morbidity of the treated women (M. Falagas, et al). At the same time, according to A. Stepanian (2008), "an estimated 975 to 17,000 patients were required to achieve statistically significant difference of mesh-related complications". He reported an erosion rate of 2.3% for the group of 402 patients that were studied. French researchers (Gadonneix P. et al, 2004) are reporting higher level of incidence of complications related to the use of two separate meshes with success rate for POP (pelvic organ prolapse) of 83 %.

Statistics

Medsafe requested information about complication rates relating to erosion from both Johnson & Johnson Medical and American Medical Systems.

Description	*JJM*	*AMS*
World wide sales since launch	*101,532*	*138,000+*
No. Of reported complications	*256*	*Not advised*

No. Of Erosion reports	*9*	*3.2%*
No. Of Vaginal Exposure reports	*34*	*Not advised*

Conclusions

Taking into consideration the relatively small number of procedures performed in New Zealand, and lack of information about the surgical techniques and the level of co- morbidity of women undertaken the procedure, it is hard to make any judgment about the New Zealand numbers of mesh-related complications.

Medsafe Questions

Medsafe seeks MDIRC's guidance on the following points.

• Would MDIRC consider 12 reports of surgical mesh erosion into either the vagina or bowel over a period of 3 years to be consistent with known complication rates?

• What action would MDIRC recommend as a suitable response to this issue?

Bibliography

1. Falagas M. E., Velakoulis S., Iavazzo C., and Athanasiou S. Mesh-related infections after pelvic organ prolapse repair surgery. Eur. J. Obstet. Gynecol. Reprod. Biol., 2007, Oct; 134(2):147:56

2. FDA Public Health Notification: Serious Complications Associated with Transvaginal Placement of Surgical Mesh in Repair of Pelvic Organ Prolapse and Stress Urinary Incontinence. Issued October 20, 2008.

3. Gadonneix P., Ercoli A., Saalet-Lizee D., Cotelle O., Bolner B., Van Den Akkr M., and Villet R. Laparoscopic sacrocolpoplexy with two separate meshes along the anterior and posterior vaginal walls for multicompartment pelvic organ prolapse. J Am Assoc Gynecol Laporosc., 2004 Feb; 11(1):29:35

4. Segev Y., Auslander R., Lavie O., Lissak A., and Abramov Y. Post hysterectomy vaginal vault prolapse: diagnosis prevention and Treatment. Harefuah. 2008 May; 147(5):406-12

5. Stepanian A. A., Miklos J. R., Moor R. D., Mattox T. F. Risk of mesh extrusion and other mesh-related complications after laparoscopic sacral colpoplexy with or without concurrent laparoscopic- assisted vaginal hysterectomy: experience of 402 patients.

Appendix 2: Examples of Medsafe Medical device classifications

Medical device classifications	Examples
Class I	elastic bandages, tongue depressors, cervical collars, slings, non-sterile dressings
Class IIa	X-ray films, intravenous tubing, contact lenses, catheters
Class IIb	Blood bags, dressings for severe wounds, condoms
Class III	Coronary artery probes, intrauterine contraceptive devices, medical devices that contain medicines, such as dressings with an anti-microbial agent
Active implantable medical devices	Pace makers, cochlear implants

Conformity assessment and ARTG inclusion

Conformity assessment is the procedure used to determine whether the safety, quality and performance of a device are adequate. Depending on the risk classification of a device, there are a number of different types of conformity assessment procedures that a manufacturer may select to use.

The manufacturer applies the conformity assessment procedure to generate evidence to demonstrate the safety, quality and performance of a device. Detailed information about conformity assessment and other aspects of medical device regulation is available in the Australian Regulatory Guidelines for Medical Devices.

Evidence that an appropriate conformity assessment procedure has been applied must be provided for all devices (other than class I devices that are not sterile or do not have a measuring function) prior to their inclusion on the ARTG

Appendix 3: FDA issues proposals to address risks associated with surgical mesh for transvaginal repair of pelvic organ prolapse

FDA NEWS RELEASE For Immediate Release**: April 29, 2014** Media Inquiries: **Susan Laine, 301-796-5349, susan.laine@fda.hhs.gov Consumer Inquiries: 888-INFO-FDA, DICE@fda.hhs.gov**

The U.S. Food and Drug Administration today issued two proposed orders to address the health risks associated with surgical mesh used for transvaginal repair of pelvic organ prolapse (POP). If finalized, the orders would reclassify surgical mesh for transvaginal POP from a moderate-risk device (class II) to a high-risk device (class III) and require manufacturers to submit a premarket approval (PMA) application for the agency to evaluate safety and effectiveness.

POP occurs when the internal structures that support the pelvic organs such as the bladder, uterus and bowel, become so weak, stretched, or broken that the organs drop from their normal position and bulge (prolapse) into the vagina. While not a life-threatening condition, women with POP often experience pelvic discomfort, disruption of their sexual, urinary, and defecatory functions, and an overall reduction in their quality of life.

"The FDA has identified clear risks associated with surgical mesh for the transvaginal repair of pelvic organ prolapse and is now proposing to address those risks for more safe and effective products," said William Maisel, M.D., M.P.H., deputy director of science and chief scientist at the FDA's Center for Devices and Radiological Health. "If these proposals are finalized, we will require manufacturers to provide premarket clinical data to demonstrate a reasonable assurance of safety and effectiveness for surgical mesh used to treat transvaginal POP repair."

Surgical mesh is a medical device that is used to provide additional support when repairing weakened or damaged tissue. Many mesh products come in kits that include instruments specifically designed to aid in insertion, placement, fixation, and anchoring of mesh in the body. Instruments provided in kits will be reviewed as part of the regulatory submission for the mesh product. Instruments are also provided separately from the mesh implant, and the FDA is proposing that this urogynecologic surgical instrumentation be reclassified from low-risk devices (class I) to moderate-risk devices (class II).

Beginning in Jan. 2012, the FDA issued orders to manufacturers of urogynecologic surgical mesh devices to conduct postmarket surveillance studies (522 studies) to address specific safety and effectiveness concerns related to surgical mesh used for transvaginal repair of POP. In Sept. 2011, the FDA's Obstetrics and Gynecology Devices Panel recommended that surgical mesh for transvaginal POP be reclassified from class II to class III and require PMAs.

In July 2011, the FDA provided an updated safety communication about serious complications associated with transvaginal placement of surgical mesh used to treat POP. At that time, the FDA also released a review of urogynecologic surgical mesh adverse events and peer-reviewed scientific literature that identified serious safety and effectiveness concerns. The FDA previously communicated about serious complications associated with transvaginal placement of surgical mesh to treat POP and stress urinary incontinence (SUI) in an Oct. 2008 FDA Public Health Notification. Surgical mesh indicated for surgical treatments of SUI, abdominal POP repair with mesh, hernia repair, and other non-urogynecologic

indications are not part of this proposed order. The FDA will take comments on the proposed order for 90 days. For more information:

- FDA Medical Devices
- FDA: Proposed Order - "Reclassification of Surgical Mesh for Transvaginal Pelvic Organ Prolapse Repair and Surgical Instrumentation for Urogynecologic Surgical Mesh Procedures; Designation of Special Controls for Urogynecologic Surgical Mesh Instrumentation"
- FDA: Proposed Order - "Premarket Approval for Surgical Mesh for Transvaginal Pelvic Organ Prolapse Repair"
- FDA: Urogynecologic Surgical Mesh Implants

Appendix 4: RANZCOG College Statement: C-Gyn 20 C-Gyn 20 Polypropylene Vaginal Mesh Implants for Vaginal Prolapse *Produced by Executive of the Urogynaecological Society of Australasia (UGSA)* College Statement C-Gyn 20 1st Endorsed: July 2007 Current: March 2013 Review: March 2016

Introduction

Very little robust information is available on the efficacy and long term safety of polypropylene mesh kits marketed for use in the surgical management of pelvic organ prolapse. The Food and Drug Administration (FDA) in the United States approved the first mesh implant for vaginal use in 2002.[1] Over the last decade a number of polypropylene mesh "kits" have been developed by industry for use by gynaecological surgeons in vaginal prolapse repairs. The introduction of vaginal mesh augmented repairs was driven by a pervasive perception that conventional native tissue repairs had unacceptably high anatomical failure rates in the short to medium term.[2]

On October 20th 2008 the FDA, after reviewing complaints made to the agency in the USA, issued a statement regarding vaginal mesh. They recommended that surgeons should undertake specialized further training before attempting vaginal mesh repairs and that they should notify patients that mesh is a permanent implant and complications can occur which may not resolve even with further corrective surgery. However they still considered these serious complications "rare".

With the increasing use of vaginal mesh, the report of 2008 was followed by more reported adverse events resulting in the organization issuing an update to its 2008 report on 13 July 2011. This FDA update stated that adverse events with the use of vaginal mesh were no longer considered rare. An accompanying literature search concluded that most cases of pelvic organ prolapse could be treated without mesh and there was no compelling evidence that the use of vaginal mesh showed greater success rates or durability over conventional surgery, particularly with regard to the vault and the posterior vaginal compartment. However, they accepted there was some evidence of greater efficacy in the use of mesh in the anterior compartment. They recommended that all patients be advised that convincing long term data on the safety of mesh was limited and that all alternatives to the use of mesh should be also discussed in detail with patients prior to its use. This update, its highly critical conclusions and the literature search on which they were based have been subsequently criticized by some clinicians – but even the most outspoken critics have agreed on the need for full preoperative evaluation, informed patient consent and improved surgeon training.

In January 2012, the FDA introduced to industry mandatory post market surveillance of all mesh implanted in the vagina – so called "522 studies", together with the gathering of comparative data between mesh kits and conventional surgery. Since then, some 88 post market study orders have been issued to 33 manufacturers of vaginal mesh kits. Given the financial burden of performing such studies, some manufacturers have withdrawn wholly (Johnson and Johnson) or partially (Boston Scientific) from the market and anecdotally the overall use of vaginally implanted mesh in the USA has fallen by 40 – 60% since the FDA update announcement of July 20112 RANZCOG College Statement: C-Gyn 20

<u>UGSA and RANZCOG Recommendations</u>

Informed Patient Consent

The consent process should be wide ranging and cover issues such as:

1. The patient should be informed that very limited robust data is available on the efficacy and safety of many of the transvaginal mesh products available in Australasia.
2. Potential benefits and complications of prolapse surgery generally versus the status quo or using conservative treatments (e.g. pelvic floor exercises or vaginal pessary). Patients with mild to moderate (pelvic organ prolapse quantification; POP-Q stage 1&2) asymptomatic prolapse do not necessarily require surgical management. The decision to operate should be based upon symptomatic bother from the prolapse defined by the patient. There is little longitudinal data in the literature on untreated asymptomatic prolapse to inform a decision for surgery in this situation.
3. Potential benefits and complications of transvaginal mesh specifically (see below).
4. Alternatives to surgical management, including non surgical options such as pelvic floor muscle training and vaginal support pessaries.
5. Other alternative surgical treatments such as conventional native tissue repair, as well as abdominal sacrocolpopexy (open or laparoscopic).
6. Complications discussed of transvaginal mesh must include mesh exposure/ erosion, vaginal scarring/stricture, fistula formation, dyspareunia, and/or pelvic pain which may require additional intervention and may not be completely resolve even with mesh removal. The possibility of mesh surgery resulting in unprovoked pelvic pain at rest should be discussed.

Surgical Training

1. Transvaginal placement of surgical mesh for pelvic organ prolapse should only be performed by surgeons who have requisite knowledge, surgical skills, and experience in pelvic reconstructive surgery. When intending to introduce the use of a new mesh technique into their practice, individual surgeons should keep a clear record of all relevant training and experience. This knowledge and experience should be objectively demonstrable either by completion of the CU fellowship or by attendance and close involvement at surgical workshops, conferences, and peer to peer training. It is essential that such training should be “hands on” training on multiple occasions. Simple observation of theatre cases is insufficient to demonstrate adequate expertise in performing these surgical procedures.
2. Specific knowledge for a particular procedure should be obtained. Different mesh kits demand different skills and specific training. It is essential that surgeons should keep themselves up to date with reported results and complications of particular procedures that they use.
3. Surgeons performing vaginal mesh surgery should ensure that they perform pelvic floor surgery (both with and without mesh) regularly enough to maintain expertise. Experienced surgeons have fewer mesh complications arising from transvaginal placement of surgical mesh for pelvic organ prolapse than those with less experience.[3] 3 RANZCOG College Statement: C-Gyn 20
4. Surgeons should be able to demonstrate experience and competence in non-mesh vaginal repair of prolapse including anterior colporraphy, posterior colporrhaphy, and vaginal colpopexy (e.g. uterosacral or sacrospinous ligament fixation) prior to training in and performance of vaginal mesh surgery.
5. Surgeons should demonstrate experience and expertise to perform intraoperative cystoscopy to evaluate for bladder and ureteral integrity.
6. Surgeons should demonstrate knowledge of the management of intra and post operative complications of vaginal mesh surgeries.

Monitoring of efficacy and safety of implants

The ideal method of evaluating long term efficacy and safety of vaginal mesh implants is by randomized control trial with long term systematic follow up.

Because such trials are very limited in number[4] the following interim strategy is suggested:

1. The outcomes and complications of transvaginal placement of surgical mesh for pelvic organ prolapse should be monitored longitudinally – preferably using a statewide or national data collection mechanism so that peer comparison may be obtained.
2. All gynaecologists should be aware of and be encouraged to make full use of the ability to report adverse events from mesh surgery to the Australian Therapeutic Goods Administration at: www.tga.gov.au The link appropriate to reporting problems with a medical implant is: http://www.tga.gov.au/safety/problem.htm
3. In New Zealand, this is should be done to the New Zealand Medicines and Medical Devices Safety Authority (MEDSAFE). The link is: http://www.medsafe.govt.nz/profs/defect.asp

Who would benefit from a transvaginal mesh implant?

This is not an easy question to answer since clear evidence is lacking and no guidance can be given regarding which specific mesh implant should be used since there is simply no robust comparative data available. A recent useful consensus statement has been published in the International Urogynaecology Journal.[5]

A broad summary of the International Urogynecological Association (IUGA) recommendations would be:

Exercise caution in using transvaginal mesh implants in:

1. Primary prolapse cases.
2. Patients younger than 50.
3. Lesser grades of prolapse (POP-Q ordinal grade 2 or less).
4. Posterior compartment prolapse without significant apical descent.
5. Patients with chronic pelvic pain.
6. Postmenopausal patients who are unable to use vaginal oestrogen therapy since this will be first line therapy for erosion.

These suggestions on patient selection are not intended to be exclusive or all encompassing and do not preclude the necessity of a broad based wide ranging discussion with the patient regarding her specific situation.

References

1. Kohli N Controversies in utilization of transvaginal mesh. Curr Opin Obstet Gynecol 2012, 24: 337-342.
2. Frazer M Transvaginal Mesh. O & G Magazine 14 (2): 28-31. 4 RANZCOG College Statement: C-Gyn 20
3. Withagen MI, Vierhout ME, Hendriks JC, et al. Risk factors for exposure, pain, and dyspareunia after tension-free vaginal mesh procedure. Obstet Gynecol 2011; 118 (3): 629Y636.
4. Altman D, et al. Anterior colporrhaphy versus transvaginal mesh for pelvic-organ prolapse. N Engl J Med 2011; 364 (19): 1826-36.
5. Davila W, Baessler K, Cosson M, Cardozo L. Selection of patients in whom vaginal graft use may be appropriate. Int Urogynecol J Pelvic Floor Dysfunct 2012. Published online 7 March 2012.

Disclaimer

This College Statement is intended to provide general advice to Practitioners. The statement should never be relied on as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of each patient.
The statement has been prepared having regard to general circumstances. It is the responsibility of each Practitioner to have regard to the particular circumstances of each case, and the application of this statement in each case. In particular, clinical management must always be responsive to the needs of the individual patient and the particular circumstances of each case.

This College statement has been prepared having regard to the information available at the time of its preparation, and each Practitioner must have regard to relevant information, research or material which may have been published or become available subsequently. Whilst the College endeavours to ensure that College statements are accurate and current at the time of their preparation, it takes no responsibility for matters arising from changed circumstances or information or material that may have become available after the date of the statements.