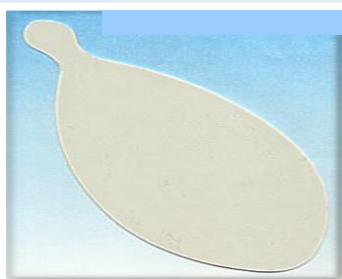


Review of Reportable Incident Briefs (RIBs) within the incident category of retained instruments highlighted incidents involving a reusable Abdominal Visceral Retractor. This prompted examination of the associated Root Cause Analyses (RCAs), review of relevant policies, product information and literature, and the convening of a working party to consider ways to reduce the likelihood of this incident recurring.



Retained instrument - abdominal visceral retractor

What is a visceral retractor?

A visceral retractor, also known as a "Murray Cod" or "FISH", is a device used during abdominal surgery to protect the underlying bowel during rectus sheath closure by acting as a physical barrier during closure of the abdomen. It is used in particular for obese patients or where the abdomen is distended during surgery and is recommended for long midline incisions.

The retractor is available as a reusable or disposable item although they are different in configuration (see pictures).

THE REUSABLE DEVICE is white/skin tone in colour, has a subtle textured surface and is shaped like a fish with a small tail. The tail is intended to extend out of the abdomen during closure and to facilitate removal from the abdomen prior to complete closure of the skin incision. The manufacturer/supplier recommends the use of artery forceps to hold and withdraw the tail section. The supplier also recommends stocks be replaced every 12 months. The cost of a re-usable retractor is \$110.00.

THE DISPOSABLE DEVICE is light blue in colour and has raised ridges across the outer surface. A ring is attached to one end of the retractor via a long string. The string and ring are intended to sit outside of the abdomen and the ring is used to pull the retractor through the small opening prior to complete skin closure. The cost of a disposable retractor is \$15.00.

Both the reusable and the disposable devices are available in more than one size. The standard size is 300mm x 130mm x 1.5mm. Both devices are made of pliable silicone and both devices contain barium sulphate that makes them radio opaque.

Risk factors associated with retained instruments / materials after surgery

A recent retrospective study found that retained instruments and sponges following an operation occurred more frequently:

- in emergency surgery, where there was an unplanned change in the operative procedure
- in patients with a higher mean body mass index.¹

Suggested additional possible risk factors include:

- excessive patient blood loss
- a fatigued surgical team
- more than one procedure
- staff changes
- failure to account for all sponges and instruments
- permissible non-counting of certain instruments.^{2,3}

A review of the incidents

A review of incidents involving the retention of visceral retractors revealed the following features:

- The visceral retractor devices remained in situ for varying times ranging from days to months post original surgery.
- Patient discomfort included abdominal pain and feeling increasingly unwell.
- All reported incidents involved the reusable visceral retractor.

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1. Gawande, A. Studdert, D. Orav, E. Troyen, A. Brennan, T. and Zinner, M. (2003). Risk factors for retained instruments and sponges after surgery. *The New England Journal of Medicine*. 348(3), 229-235.
2. Anonymous (2003). How surgical instruments get left behind. *Clinicians Review*. April.
3. Beyea, S. (2003). Counting instruments and sponges. *AORN Journal*. 78(2), 290-294.

Problems with x-ray reading, reporting and follow up featured in these incidents. Other contributing factors identified through Root Cause Analyses included:

- inadequate staff training and inexperience of staff
- lack of availability/access to product information
- absence of specific and detailed instructions and precautionary advice in manufacturers instructions
- non-compliance to manufactures instructions
- product design (regular shape, colour close to a light skin colour, short tail)
- devices determined as non-accountable
- inadequate policies at Area level
- limited observation of wound closure by scrub and scout nurse as their visual focus at the end of surgery is on the surgical count.

Use of the retractors in NSW

Some surgeons elect to use a visceral retractor device to facilitate abdominal wound closure when a patient is obese or when abdominal contents are distended. Using a disposable or re-usable device is influenced by the stock supply within the facility.

Alerting Area Health Services to a Potential Problem

In April 2004, all Area Health Services were alerted regarding the apparent risk in relation to the re-usable retractor and were asked to account for the item(s) within their area. Where devices could not be accounted for, a follow up of patients who had undergone abdominal surgery was necessary to confirm that the missing devices were not left in patients.

Responses from this alert revealed some facilities stock the disposable device, some stock the re-usable device while others do not keep either device. Counting of the re-usable retractor also varied across facilities. Some facilities had not previously identified the re-usable retractors as an accountable item however following request to account for these items all facilities where the item is in use indicated their intent to include it in the surgical count, or continue to include in the surgical count, from this point on.

Health Service Action Required

A working party, convened in May 2004, made the following recommendations:

- Current evidence suggests that the design of the disposable retractor is superior to the design of the reusable retractor due to the absence of known incidents and apparent cost effectiveness.
- Where facilities choose to use the reusable visceral retractor, the surgeon must use the device according to the manufacturers recommendations ie – with a pair of artery forceps attached.
- Abdominal visceral retractors must be included in the surgical count.
- Facilities must undertake regular inventory checks on reusable items.

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