

Abdominal x rays made easy: iatrogenic, accidental, and incidental objects

In the final part of this series, **Ian Bickle** and **Barry Kelly** look at some of the more unusual findings on an abdominal x ray film



Figure 1 (left) nasogastric tube clips for recent surgery and figure 2 (above) intruterine coil device in situ

as a tube device, most commonly the nasogastric tube (figure 1). These are the most commonly found iatrogenic objects, and their position is sometimes confirmed by a chest x ray film.

Other devices may be in the vascular, hepatopancreatobiliary, gastrointestinal, and

Internal objects

- Iatrogenic
- Biliary or vascular stent
- intrauterine coil devices
- Sterilisation clips
- Surgical clips
- Greenfield filter (inside inferior vena cava)
- Percutaneous endoscopic gastrostomy tube
- Nasogastric tube
- Accidental
- Swallowed objects: razor blades, batteries, paper clips
- Objects placed inside rectum or vagina: caps, bottles, vibrator

External objects

- Incidental
- Stoma ring
- Objects in clothing: coins, keys, comb
- Objects on clothing: buttons, clips, zips

In the final part of our series we will focus on iatrogenic, accidental, and incidental objects seen on abdominal x ray films. These artefacts may be placed inside the body (internal) or be about the person (external). Internal objects may have been placed with intention by a health professional or temporarily by the individual concerned. Intentionally placed internal objects may have required surgery or been inserted through one of the body's natural orifices (mouth, vagina, anus). Incidental

objects are those that become projected on to the radiograph.

Iatrogenic objects

These are placed intentionally by a health professional.

A wide range of medical devices appear on the abdominal x ray film, and many have been placed by radiologists themselves. On some occasions a radiograph's sole purpose is to confirm the position of an object, such



Figure 3 (top): stoma ring, figure 4 (above): navel ring, and figure 5 (below): a knife in the abdomen



genitourinary systems.

Evidence of vascular intervention may be

seen in the form of arterial stents and the placement of filters in the venous system—for example, the Greenfield filter placed in the inferior vena cava, which is used to prevent recurrent pulmonary emboli.

The hepatopancreatobiliary system is also routinely stented, often for palliative relief of obstructive jaundice secondary to neoplasm. The stenting is performed either by radiological percutaneous transhepatic cholangiography (PTC) or by endoscopic retrograde cholangiopancreatography (ERCP).

A percutaneous endoscopic gastrostomy (PEG) tube may also be seen on an abdominal x ray film.

In women, intrauterine coil devices and sterilisation clips are readily seen in the lower half of the abdominal x ray film within the pelvis (figure 2). Tampons may also appear as tubular gaseous densities within the pelvis and should not be confused with anything more sinister.

Incidental objects

These objects seen on an abdominal x ray films usually do not affect the wellbeing of the patient. These objects are external; they are either attached to the patient's body or contained on or inside the patient's clothes. Attached objects may indicate medical conditions, such as a stoma ring (figure 3) or represent body art, such as a navel ring (figure 4). Other incidental objects can be part of people's clothing, such as buttons, zips, clips, or brooches.

Alternatively, the projected objects are inside a patient's clothing—in the case of the abdominal x ray film, usually a trouser pocket that has not been emptied before a film is taken. These can be metallic objects such as coins, paper clips, and keys, or other dense objects such as a comb.

Accidental objects

These are objects that have been placed in the body by the individual concerned. The object then either remains in place and becomes immovable or progresses further through the gastrointestinal tract and becomes lodged. Distinction can be made between objects swallowed or objects placed in the rectal or vaginal orifices. On occasion these objects may be retained foreign bodies, such as a knife after a stabbing (figure 5).

Swallowed objects may be ingested intentionally or by misfortune. They usually travel through the gastrointestinal tract, but on occasion they become lodged. Razor blades, batteries, coins, paper clips, and small toys are just a few of the potential objects (figure 6). Three chief groups of patients fall into this category—patients with psychiatric ill health, children, and drug smugglers.

Per rectum (PR) objects, such as bottles,



Figure 6: swallowed objects (3 cigarette lighters)

vibrators, and light bulbs, are almost always placed inside the rectum for sexual purposes, only to become retained, requiring medical attention for extraction (figure 7).

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Figure 7: a bottle per rectum