

DRAINS IN SURGERY

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In 1887 Lawson Tait suggested 'when in doubt drain!'. This edict has been criticised and the value of routine drain placement has been scrutinised. Drains are inserted to allow fluid that might collect in a body cavity to drain freely to the surface. The fluid to be drained may include blood, serum, pus, urine, faeces, bile, lymph or air. Drains may also be used for wound irrigation in certain circumstances. Their use can be regarded as prophylactic or therapeutic, depending on the circumstance warranting their insertion. Abdominal drains are usually placed in the pelvis to drain collections as this is the most dependent area. Other locations are usually dictated by the pathology and procedure performed.

Open drains (Figure 7.20a). These aid in passive drainage of a cavity based on gravity by forming a channel between the body and the external environment. They are often unsightly, require frequent dressing changes and may act as a conduit that enhances bacterial colonisation. The Penrose and corrugated drains are examples of an open drain used in debrided wounds and abscess cavities.

Closed drains:

Suctioned (active) (Figure 7.20b). These maintain negative pressure, thereby actively suctioning out fluid and/or obliterating dead space and preventing fluid accumulation. Caution must be exercised when used adjacent to vital structures. A suction drain is often used

(a) (b) (c) Charles Bingham Penrose, 1862–1925, Professor of Gynecology, The University of Pennsylvania, Philadelphia, PA, USA. and in head and neck surgery.

Non-suctioned (passive) (Figure 7.20c). Use capillary action and gravity to drain fluid. The most common examples are urinary catheters, nasogastric drainage systems and a Robinson's drain, which is used within the abdominal cavity to help to evacuate fluid without sucking viscera or omentum.

(a) (b) (c) Drains in surgery. Open drainage of a wound using a corrugated drain. A closed suction drain using a vacuum-assisted drainage system. A closed, non-suction drain commonly used to drain the abdominal cavity (courtesy of Dr Vinay Timothy Kuruvilla).

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