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A systematic review of the use of intraoperative surgical drains vs no drains in preventing intra-abdominal abscess post appendicectomy for the treatment of complicated appendicitis.

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Abstract

Background: This systematic review aimed to answer the question of whether surgical drains prevent the incidence of intra-abdominal abscesses in patients undergoing an appendicectomy for complicated appendicitis. Some surgeons leave a surgical drain in situ to remove contaminated intra-abdominal fluids to prevent abscess formation (Abu *et al.*, 2022). However, some studies have shown that the drain itself may act as a foreign body and increase the risk of an intra-abdominal abscess forming (Nazarian, Boardman, Chohda and Shah, 2020).

Methods: This systematic review included eight studies from the past ten years with participants aged 18 and over with complicated appendicitis requiring an appendicectomy. Papers were identified from PubMed and selected using a strict inclusion and exclusion criteria. Narrative synthesis alongside Synthesis Without Meta-analysis (SWiM) guidelines (Campbell *et al.*, 2020) was used to identify common outcomes in these studies and the incidence of intra-abdominal abscess (IAA), Post-operative wound infections (POWI) and Length of Hospital Stay (LOS).

Results: This systematic review collated data from a total of 1,868 patients, 665 in the surgical drain after surgery group (SDS) and 1,203 in the no surgical drain group (NSD). The articles reported no strong evidence of a statistically significant difference between the incidence of IAA or POWI between the SDS and NSD groups. LOS was consistently found to be significantly longer in the SDS groups compared to NSD groups in seven of the eight studies.

Conclusions: The findings of this systematic review do not show a difference in the incidence of intra-abdominal abscess formation with the use of surgical drains in appendectomies. However, the use of surgical drains was found to be associated with a significantly longer hospital stay. There is a possibility a higher LOS may be correlated with a higher incidence of post-operative complications when using a surgical drain, although the

exact reasons for this are unclear and require further investigation. Currently there is not strong enough evidence to write guidelines to use or not use drains in appendicectomies for complicated appendicitis and therefore further research is required.

Keywords: Appendicitis | Appendicectomy | Surgical drain | Intra-abdominal abscess |

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