

First report of free Cholesterol Granuloma in pelvis

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Introduction

Cholesterol granulomas are benign, inflammatory lesions predominantly found in the temporal bone, particularly within the middle ear or mastoid regions. Their occurrence outside these typical anatomical locations is rare, with pelvic occurrences being exceedingly uncommon. To date, there are only isolated cases documented in medical literature. This case report describes the first recorded instance of a completely free-floating cholesterol granuloma within the pelvic cavity, highlighting diagnostic and surgical considerations.

Case presentation

We present the case of a 54-year-old female patient who was referred for gynaecological evaluation following persistent irregular vaginal bleeding attributed to uterine fibroids, which were refractory to conservative medical treatments. Clinical and radiological assessments recommended surgical intervention, and the patient was scheduled for elective total laparoscopic hysterectomy (TLH) and bilateral salpingo-oophorectomy (BSO). Intraoperatively, during systematic exploration, a distinctly mobile, white-coloured, freely floating mass measuring approximately 4 cm by 4 cm was unexpectedly discovered within the pouch of Douglas. The lesion was well-demarcated, did not demonstrate invasive characteristics, and appeared completely unattached to adjacent pelvic structures. Given its atypical appearance and uncertain nature, the mass was carefully excised intact using laparoscopic surgical techniques and subsequently submitted for detailed histopathological analysis which demonstrated a fibrotic and heavily calcified nodule displaying abundant cholesterol clefts, consistent with a cholesterol granuloma. Microscopic evaluation confirmed the presence of a well-defined fibrous capsule, along with a dense inflammatory infiltrate. Crucially, no signs of cellular atypia or malignancy were identified, definitively confirming the diagnosis of cholesterol granuloma.

Case report

Cholesterol granulomas represent benign inflammatory conditions arising primarily from chronic inflammatory reactions or haemorrhagic processes leading to cholesterol crystal deposition. They are most commonly associated with middle ear and mastoid pathology, frequently linked to chronic otitis media or trauma. Pelvic involvement remains extraordinarily rare, and the mechanism for granuloma formation in the pelvis is unclear, although it may relate to chronic inflammation, previous minor trauma, or haemorrhage within pelvic tissues.

The presented case highlights several crucial clinical points. First, pelvic cholesterol granulomas can clinically and radiologically mimic malignant masses, posing diagnostic challenges and potentially leading to overtreatment. Second, despite their rare occurrence, cholesterol granulomas should be considered within differential diagnoses when encountering unexplained pelvic masses, especially in patients undergoing gynaecological surgeries. Moreover, this case emphasizes the critical importance of intraoperative vigilance and detailed exploration during surgical interventions to identify unexpected findings. Prompt and careful surgical excision combined with rigorous histopathological evaluation remains essential for accurate diagnosis, management planning, and prevention of unnecessary aggressive treatments or interventions.



Figure 1: Laparoscopic view of cholesterol granuloma

Conclusion

Cholesterol granulomas, although exceptionally rare in the pelvic region, must be recognized as potential benign aetiologies for pelvic masses. Accurate histopathological diagnosis is vital to differentiate these lesions from malignancies, thus guiding appropriate clinical management. Increased awareness among clinicians and pathologists of such rare presentations can ensure optimal patient outcomes and prevent unwarranted interventions.

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