

Research Article

Hidden Malignancy behind the Hernial Sac: Incidental Low-Grade Appendiceal Mucinous Neoplasm Discovered during Incisional Hernia Repair

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ABSTRACT

Background: Low-grade appendiceal mucinous neoplasms (LAMNs) are uncommon epithelial tumors of the appendix, often discovered incidentally during imaging, surgery, or histopathological examination. Their clinical presentation is frequently nonspecific, making preoperative diagnosis challenging.

Case Presentation: A 55-year-old male presented with multiple swellings over a previous laparotomy scar for four months. He had undergone emergency laparotomy with colorectal anastomosis for sigmoid colon carcinoma three years earlier. Clinical examination and radiological evaluation were consistent with a large incisional hernia. Contrast-enhanced computed tomography demonstrated supraumbilical herniation of omentum and divarication of recti without evidence of recurrent malignancy. Colonoscopic evaluation was normal. The patient underwent open onlay mesh repair with anterior component separation. During surgery, the appendix appeared inflamed, with a mucinous lesion involving the tip. Appendectomy was performed. Histopathological examination revealed low-grade appendiceal mucinous neoplasm (LAMN), pathological stage pTisNx, with negative proximal margins and no lymphovascular or perineural invasion.

Conclusion: This case highlights the importance of careful intraoperative inspection during abdominal wall reconstruction procedures. Incidental appendiceal neoplasms, although rare, may be encountered unexpectedly, and timely surgical management can prevent disease progression and complications such as pseudomyxoma peritonei.

Keywords: Low-Grade Appendiceal Mucinous Neoplasm, Lamn, Incidentaloma, Appendix, Incisional Hernia, Appendectomy, Mucinous Neoplasm.

INTRODUCTION

Appendiceal neoplasms are rare entities, identified in approximately 0.5–1% of appendectomy specimens. Among these, low-grade appendiceal mucinous neoplasms (LAMNs) represent a distinct pathological entity characterized by mucin-producing epithelial proliferation with low-grade cytological atypia. Despite their indolent histological appearance, these tumors have the potential to disseminate mucin into the peritoneal cavity, resulting in pseudomyxoma peritonei.

Most LAMNs are diagnosed incidentally during imaging studies, surgery performed for unrelated pathology, or histopathological examination following appendectomy. Their rarity and often asymptomatic nature make preoperative diagnosis difficult. We report an unusual case of incidental LAMN discovered during open repair of an incisional hernia in a patient previously operated on for sigmoid colon carcinoma.

Case Presentation

A 55-year-old male presented to the surgical outpatient department with complaints of swelling over a previous midline laparotomy scar for four months. He had undergone emergency laparotomy with resection of sigmoid growth and colorectal anastomosis three years earlier.

There was no history of abdominal pain, altered bowel habits, vomiting, fever, or weight loss.

Physical examination revealed multiple reducible swellings over the abdominal scar, the largest measuring approximately 6 × 5 cm. Cough impulse was present. Vital parameters were within normal limits.

A clinical diagnosis of incisional hernia was made.



Investigations

Contrast-enhanced computed tomography (CECT) of the abdomen demonstrated:

- Supraumbilical incisional hernia containing omentum.
- Divarication of recti with protrusion of omentum and bowel loops.

- No evidence of recurrent malignancy.
- No significant lymphadenopathy.
- No free intraperitoneal fluid.
- No mural thickening or filling defects at the colorectal anastomotic site.



Lower gastrointestinal endoscopy revealed normal findings with no evidence of local recurrence or synchronous lesions.



Surgical Management

The patient was scheduled for elective open onlay mesh repair with anterior component separation.

During exploration, the appendix appeared inflamed. Inspection revealed a localized mucinous lesion involving the tip of the

appendix. Given the suspicious appearance, appendectomy was performed and the specimen sent for histopathological examination.

The surgeons subsequently completed the hernia repair using mesh reinforcement.



Histopathological Findings

Microscopic examination demonstrated:

- Low-grade appendiceal mucinous neoplasm (LAMN).
- Pathological stage: pTisNx.

- Tumor involvement extending to the muscularis propria without destructive invasion.
- Proximal resection margin free of tumor.
- No lymphovascular invasion.
- No perineural invasion.



The postoperative period was uneventful, and the patient was discharged in stable condition with advice for regular follow-up.

DISCUSSION

LAMNs are uncommon appendiceal epithelial tumors characterized by mucinous epithelium with low-grade atypia and abundant mucin production. They constitute the majority of non-invasive appendiceal mucinous neoplasms and are classified separately from conventional adenocarcinoma because of their unique biological behavior.

Patients may present with symptoms mimicking acute appendicitis, abdominal pain, palpable mass, or may remain entirely asymptomatic. Consequently, many cases are identified

incidentally during surgery or pathological examination.

The greatest clinical concern associated with LAMN is rupture of the appendix, which can result in dissemination of mucin-producing cells throughout the peritoneal cavity, leading to pseudomyxoma peritonei. Therefore, meticulous surgical handling is essential.

Current management recommendations suggest that appendectomy alone is adequate for localized LAMN with negative margins and no evidence of perforation or extra-appendiceal disease. Long-term outcomes are excellent in completely resected non-invasive lesions.

The uniqueness of our case lies in the incidental detection of LAMN during surgery performed for an unrelated abdominal wall pathology. Preoperative imaging failed to identify the

lesion, emphasizing the importance of systematic intraoperative examination of abdominal viscera even during seemingly straightforward hernia procedures.

CONCLUSION

Incidental appendiceal mucinous neoplasms are rare but clinically significant findings. Surgeons should maintain a high index of suspicion when abnormal appendiceal morphology is encountered intraoperatively. Careful inspection and prompt appendectomy can facilitate early diagnosis and prevent progression to potentially devastating complications such as pseudomyxoma peritonei (Padmanaban et al., 2016). This case underscores the value of thorough abdominal exploration during hernia surgery and highlights the role of histopathological examination in detecting occult malignancy.

Declarations

Funding

No funding was received for this study.

Conflict of Interest

The authors declare no conflict of interest.

Ethical Approval

Institutional ethical approval was waived for this single case report.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Author Contributions

All authors contributed to patient management, data collection, manuscript preparation, and final approval of the manuscript.

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