Surgery Research Journal
ISSN: 2768-0428

Original Article

Adenomatoid Tumor Case Report: An Unusual Intraoperative Finding of Peritoneal Deposits Revealing Adenomatoid Tumor Anomaly

Mohammad Waleed Alansari[1], Qayrawan Alshammar[2], Khaled Hindi[3]

[1]General Surgery Resident, Department of General Surgery, Mubarak Al-Kabeer Hospital, Kuwait City 00965, Kuwait
[2]General Surgery Resident, Department of General Surgery, Mubarak Al-Kabeer Hospital, Kuwait City 00965, Kuwait
[3]Consultant Pathologist, Department of Pathology, Mubarak Al-Kabeer Hospital, Kuwait City 00965, Kuwait

Correspondence

Mohammad W. Alansari

General Surgery Resident, Department of General Surgery Mubarak Al-Kabeer Hospital, Ministry of Health Kuwait (MOH), Jabriya, Block 4, P.O. Box 46300, Kuwait.

Tel: 0096597184849

E-mail: mw.alansari@moh.gov.kw

Abstract

Adenomatoid tumors are non-cancerous growths that arise from mesothelial cells and typically affect the reproductive organs of both men and women. Nonetheless, documented cases have shown occurrences in other locations such as the adrenals, liver, pleura, and peritoneum. Identifying an adenomatoid tumor in these areas poses a significant diagnostic challenge due to their infrequency. In most instances, patients do not display symptoms, and the deposits are incidentally discovered during surgery for other medical conditions. We present the case of a 36-years-old male who presented with symptoms of incarcerated hernia and underwent urgent laparoscopic hernia repair, during which multiple deposits were incidentally discovered. Subsequent histopathological examination confirmed benign mesothelial cell proliferation consistent with benign adenomatoid tumor.

- Received Date: 13 Sep 2024
- Accepted Date: 19 Sep 2024
- Publication Date: 23 Sep 2024

Keywords

Adenomatoid tumors, benign tumors, mesothelial, gastrointestinal.

Introduction and importance

Adenomatoid tumor is a non-cancerous, well-defined growth originating from mesothelial cells. It typically affects the para-testicular region, uterus, and fallopian tube. This non-cancerous tumor of unknown cause predominantly affects the reproductive organs in both men and women, with a higher incidence among males [1]. However, there have been a few documented instances of it appearing in the pleura, peritoneum, adrenal gland, and liver [2-4]. The reason for the observed prevalence of this condition in the genital tract as opposed to other areas where mesothelial cells are found remains unexplained [5]. Over time, adenomatoid tumors have piqued interest due to their histological origin, leading to the proposal of several hypotheses [5]. Immunohistochemical studies indicate a likelihood of mesothelial histogenesis [5]. Encountering an adenomatoid tumor in these locations presents a significant diagnostic challenge due to their rarity, especially since these tumors often resemble adenocarcinoma in appearance. However, it is crucial to distinguish them as they are benign, usually do not reoccur after removal, and do not necessitate further treatment. .

Case presentation

A 36-years-old male known case of Behcet's disease presented to the emergency department with three days history of sudden onset non-radiating para-umbilical pain with no specific exacerbating or relieving factors. Patient described a para-umbilical mass that has been present for a while being more prominent when standing and upon coughing or straining. Denying any vomiting, fever, constipation, obstipation, or distention.

On clinical examination, the patient was hemodynamically stable; a tender and irreducible para-umbilical hernia with positive cough impulse was noted, with no overlying skin changes. The rest of physical examination was unremarkable. Labs were unremarkable at the time of admission other than leukocytosis with a count of 15,200. Urgent computed tomography (CT) scan with contrast was ordered, which revealed fat containing umbilical hernia measuring 4 x 3.75cm with a neck measuring 1.65cm; no related bowel obstruction or definite vascular compromise.

Patient was admitted in the surgical ward as case of incarcerated umbilical hernia to undergo urgent laparoscopic hernia repair. The patient consented to the procedure following anesthesiology clearance.

Intra-operatively, a 2cm umbilical defect was identified with omental content, bowel was healthy. Hernia content was reduced, and laparoscopic hernia repair was performed with mesh. Incidentally, multiple peritoneal deposits on the anterior abdominal wall and bowel were identified and excised to be sent for histopathology (figures 1A and B).

Citation: Alansari WM, Alshammar Q, Hindi K. Adenomatoid Tumor Case Report: An Unusual Intraoperative Finding of Peritoneal Deposits Revealing Adenomatoid Tumor Anomaly. Surg Res J. 2024;4(2):1-3.

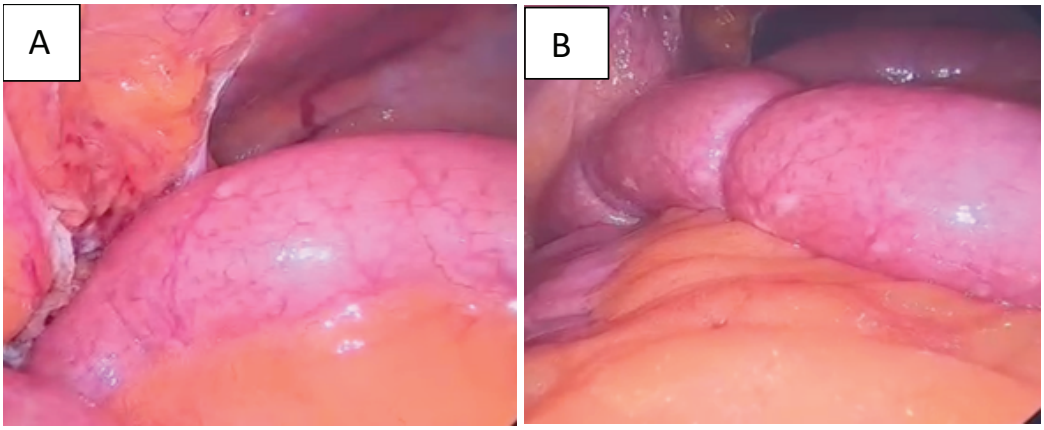

Figure 1. *Intraoperative findings of multiple benign deposits on the bowel consistent with adenomatoid tumor*

The patient tolerated the procedure well, with no post-operative events and was discharged in two days after resuming regular diet and having normal bowel motions.

The patient was followed up in the surgical outpatient clinic after two weeks. Reporting no complains and the wounds were dry and clean. Histopathology of the excised deposits revealed benign mesothelial call proliferation consistent with benign adenomatoid tumor (figure 2).

Clinical discussion

Only a small number of adenomatoid tumors have been observed outside the genital tract, with documented occurrences in the pleura, liver, pancreas, omentum, and adrenal glands. Adenomatoid tumors typically manifest as solitary fibrous nodules and are known for their slow-growing nature. They are commonly discovered incidentally during routine examinations, surgeries, and autopsy [6]. The diagnosis of an adenomatoid tumor can be challenging, especially when it involves the peritoneum or liver [6]. Through comprehensive histochemical, immunohistochemical, and ultrastructural investigations, it has been consistently revealed that adenomatoid tumors exhibit mesothelial differentiation. As a result, it is now understood that this benign tumor originates from mesothelial cells [5]. Adenomatoid tumors are frequently accompanied by chronic inflammation and fibrosis, and there is a recognized link between peritoneal insults, such as a hernial sac, and the development of adenomatoid tumors. Although these findings may suggest a hyperplastic nature for these lesions, the absence of papillary architecture does not support this hypothesis in light of the tumor's mesothelial differentiation [5].

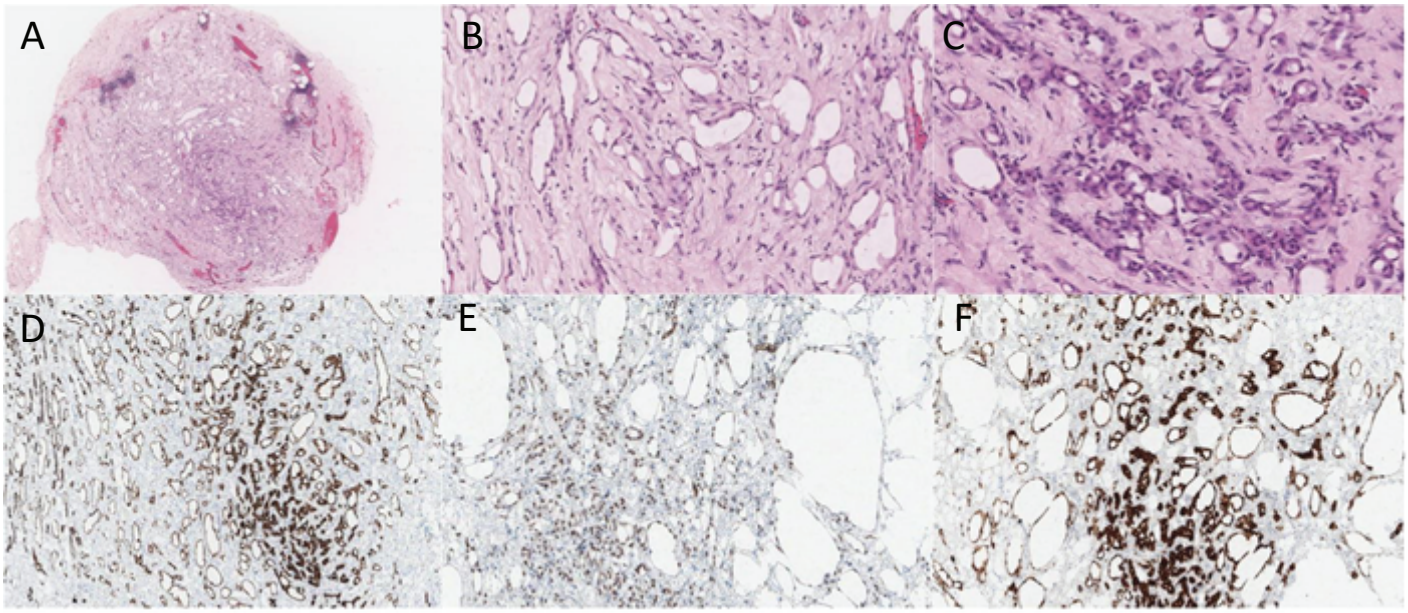

Figure 1. *Peritoneal adenomatoid tumor appears as a well marginated and unencapsulated lesion (a). The cellular component consists of irregular pseudo vascular spaces (b) and variably sized tubular structures (c), which are lined by cytologically bland mesothelial cells and are randomly embedded in a dense collagenous stroma. Positive immunohistochemical staining for pan cytokeratin (d), WT1 (e) and calretinin (f) confirms mesothelial cell origin.*

The precise nature and histogenesis of adenomatoid tumors have been the subject of debate for many years. Furthermore, due to their benign course and frequent incidental diagnosis, they have not received much attention in the literature. As a result, their pathogenesis and potential link to mesothelial lesions have remained unknown. However, there has been significant recent progress in understanding their molecular biology [7].

Histopathologic gross examination of these tumors usually reveals a smooth, firm, yellow-tan cut surface and are typically small <2cm. Characteristic microscopic features of these tumors are the variable architectural growth patterns including tubular, gland-like, corded, nested and angiomatoid spaces, which are typically embedded in a fibrous/fibromuscular stroma. The cells are epithelioid or flattened with bland nuclear features, resembling benign mesothelial cells. Furthermore, they have immunohistochemical profile of mesothelial cells with positivity for various mesothelial markers such as calretinin, CK5/6, WT1, and D2-40. BAP-1, a commonly used immunomarker in diagnostically challenging mesothelial proliferations, has retained nuclear immunohistochemical expression in adenomatoid tumors as compared to malignant mesothelioma where expression is typically lost. The differential diagnosis of mesothelial lesions within peritoneum should include malignant mesothelioma, well-differentiated papillary mesothelial tumor, lymphangioma and metastatic adenocarcinoma. The above differentials can be very difficult to sort out, especially in a frozen section intra-operative setting, with significant prognostic and therapeutic implications for the patient. Thus, it is important to handle each case carefully to avoid erroneous diagnosis that may lead to inappropriate treatment. Careful morphological inspection combined with immunohistochemistry can help navigate diagnostic challenges and uncertainty. Metastatic adenocarcinoma usually has pronounced nuclear atypia, pleomorphism, mitotic activity and do not stain with mesothelial immunomarkers. Malignant mesotheliomas are usually larger in size and have more diffuse infiltrative growth patterns with invasion of adjacent tissue. Also, microscopically they have more conspicuous nuclear pleomorphism, mitotic activity, necrosis with loss of nuclear BAP-1 immunohistochemical expression [7].

Conclusion

Adenomatoid tumors, which are non-cancerous growths originating from mesothelial cells, are usually found in the para-testicular region, uterus, and fallopian tube, with a higher occurrence in young males. There have been rare cases of these tumors appearing in the pleura, peritoneum, adrenal gland, and liver. Despite their infrequency in non-reproductive organs where mesothelial cells are present, the reason of their prevalence in the genital tract remains unknown. The etiology of adenomatoid tumors remains to be established. Encountering an adenomatoid tumor in these locations presents a notable diagnostic hurdle due to their uncommon occurrence, particularly since these tumors often have a similar appearance to adenocarcinoma. Given the fundamental differences in their treatment, correctly distinguishing adenomatoid tumors from adenocarcinoma and malignant mesothelioma is significant. Thus, clinical, radiological information in conjunction with histomorphology and immunohistochemistry is critical to avoid medical errors.

References

1. Lins CM, Elias J Jr, Cunha AF, Muglia VF, Monteiro CR, Valeri FV, Feres O. MR imaging features of peritoneal adenomatoid mesothelioma: a case report. Clinics (Sao Paulo). 2009;64(3):264-9. doi: 10.1590/s1807-59322009000300020. PMID: 19330256; PMCID: PMC2666464.
2. ncit.nci.nih.gov. (n.d.). NCI Thesaurus. [online] Available at:https://ncit.nci.nih.gov/ncitbrowser/ConceptReport.jsp?dictionary=NCI_Thesaurus&code=C3762.
3. Karpathiou G, Hiroshima K, Peoc'h M. Adenomatoid Tumor: A Review of Pathology With Focus on Unusual Presentations and Sites, Histogenesis, Differential Diagnosis, and Molecular and Clinical Aspects With a Historic Overview of Its Description. Adv Anat Pathol. 2020;27(6):394-407. doi: 10.1097/PAP.0000000000000278. PMID: 32769378.
4. Yeh CJ, Chuang WY, Chou HH, Jung SM, Hsueh S. Multiple extragenital adenomatoid tumors in the mesocolon and omentum. APMIS. 2008;116(11):1016-9. doi: 10.1111/j.1600-0463.2008.01084.x. PMID: 19133002.
5. Hayes SJ, Clark P, Mathias R, Formela L, Vickers J, Armstrong GR. Multiple adenomatoid tumours in the liver and peritoneum. J Clin Pathol. 2007;60(6):722-4. doi: 10.1136/jcp.2005.035386. Epub 2007 May 4. PMID: 17483249; PMCID: PMC1955065..
6. Erra S, Ennio N. A Rare Peritoneal Adenomatoid Tumor. Journal of Case Reports. 2021;11:203–205. doi: https://doi.org/10.17659/01.2021.0054.
7. Karpathiou G, Hiroshima K, Peoc'h M. Adenomatoid Tumor: A Review of Pathology With Focus on Unusual Presentations and Sites, Histogenesis, Differential Diagnosis, and Molecular and Clinical Aspects With a Historic Overview of Its Description. Adv Anat Pathol. 2020;27(6):394-407. doi:10.1097/PAP.0000000000000278