Case Report

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Infected incisional hernia revealing incidental choriocarcinoma on histopathology: A case report

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Abstract

Incisional hernia repair is commonly complicated by infection and delayed wound healing, usually attributed to contamination or mesh-related factors. Rarely, persistent or atypical wounds may indicate an underlying malignancy. Choriocarcinoma is an aggressive trophoblastic tumor, with extrauterine forms being uncommon and typically metastatic. Primary involvement of the abdominal wall is exceptionally rare. We report a case of an infected incisional hernia presenting as a chronic nonhealing wound, with incidental choriocarcinoma diagnosed on histopathology. A 40-year-old woman with two prior cesarean deliveries had previously undergone a combined hysterectomy and incisional hernioplasty with onlay polypropylene mesh at another center. Her postoperative course was complicated by persistent wound infection requiring multiple debridements, but the wound failed to heal over 2 years. She later presented to us with foul-smelling discharge from the abdominal wound, for which mesh explantation and secondary closure were performed. After being lost to follow-up, she presented a year later with purulent discharge from multiple sinus tracts. Imaging revealed a large infraumbilical incisional hernia with subcutaneous fluid collection. She underwent diagnostic laparoscopy, followed by wide excision of the infected abdominal wall and reconstruction with a biological mesh. Histopathological examination (HPE) demonstrated high-grade choriocarcinoma, confirmed on immunohistochemistry. She subsequently received multiagent chemotherapy and had an uneventful recovery. Persistent or recurrent wound infection following incisional hernia repair should prompt consideration of atypical etiologies, including malignancy. Histopathological evaluation of the excised tissue in such cases is essential to avoid missed diagnoses. Early detection and a multidisciplinary approach are key to optimal outcomes.

Keywords:

Biological mesh, choriocarcinoma, chronic wound infection, histopathology, incisional hernia

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Introduction

Incisional hernia repair is one of the most frequently performed abdominal wall procedures, yet it continues to be associated with significant postoperative morbidity.[1,2] Surgical site infections (SSIs) remain a common complication, with reported rates ranging from 0% to 21%, while true mesh-related infections occur in approximately 0%–1.4% of cases.[3,4] These infections typically present as wound discharge, sinus formation, or delayed healing and are generally attributed to contamination, patient-related risk factors, or prosthetic material complications.[5] In contrast, malignant etiologies underlying persistent or atypical wound presentations in incisional hernia repair are exceedingly rare.

Choriocarcinoma is a highly aggressive trophoblastic malignancy, most commonly of gestational origin, with an estimated incidence of approximately 1 in 20,000–

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40,000 pregnancies.[6] Extrauterine choriocarcinoma is even more uncommon, with population-based data suggesting an incidence as low as 0.02 per 100,000 individuals, and typically represents metastatic disease rather than a primary lesion.[7] Primary involvement of the abdominal wall is exceptionally rare and poses a significant diagnostic challenge, particularly when presenting in the setting of an infected or nonhealing surgical wound. We report a unique case of an infected incisional hernia presenting as a chronic nonhealing wound, in which histopathological evaluation revealed incidental choriocarcinoma in the absence of intraabdominal or visceral disease.

Case Presentation

A 40-year-old woman with a body mass index of 26.2 kg/m^2 presented to our unit with pain and discharge from a large wound over a previous Pfannenstiel scar [Figure 1]. She had a history of two cesarean sections, followed by a combined hysterectomy and incisional hernioplasty at the Pfannenstiel scar using an onlay polypropylene mesh at another hospital, and developed a postoperative SSI. Over the next 2 years, she underwent multiple debridements and mesh salvage attempts for persistent infection. This prolonged course of illness and repeated interventions imposed a significant burden on her physical as well as psychological well-being. After appropriate counseling, she was reevaluated, and wound cultures were obtained. Targeted intravenous antibiotic therapy was initiated based on culture and sensitivity reports. Surgical debridement with mesh explantation [Figure 2] and secondary wound closure was performed. The patient was advised regular follow-up for delayed abdominal wall reconstruction; however, she was lost to follow-up after 3 months.

She returned to our unit a year later for reevaluation due to persistent high-grade fevers and discharge from sinus tracts along the surgical site [Figure 3]. On examination, a few sinus openings, each measuring approximately 2 cm × 2 cm, were noted along the previous scar line with copious amounts of purulent discharge. During saline irrigation, the sinus openings were found to be interconnected beneath the surgical scar in the subcutaneous planes. She was admitted for assessment; pus was sent for culture, fungal staining, and Gene Xpert for detection of *Mycobacterium tuberculosis*. Workup revealed *Pseudomonas aeruginosa* and ruled out fungal and mycobacterial infections. Appropriate intravenous antibiotic therapy (intravenous piperacillin–tazobactam) was initiated based on the sensitivity

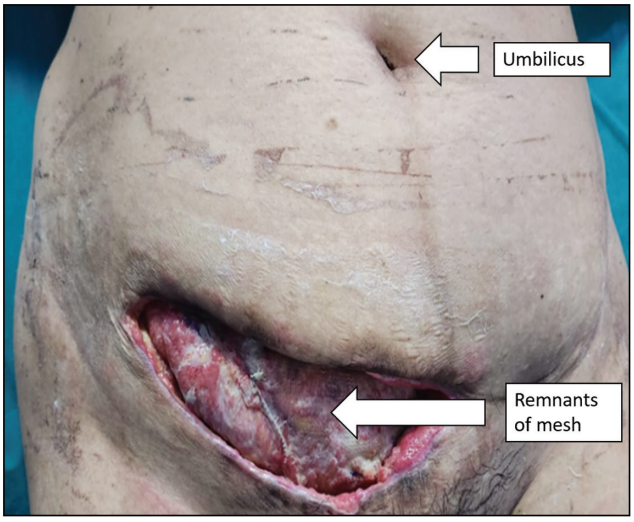


Figure 1: Chronic nonhealing abdominal wound with retained polypropylene mesh. Clinical photograph showing a chronic nonhealing wound over the previous Pfannenstiel incision, with visible remnants of the onlay polypropylene mesh and polypropylene sutures embedded within the infected granulation tissue

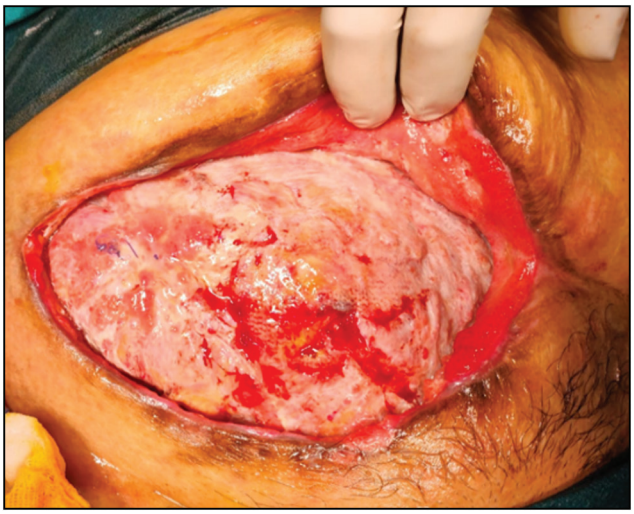


Figure 2: Wound appearance following mesh explantation and debridement. Intraoperative photograph following complete removal of the infected polypropylene mesh, excision of necrotic soft tissue, and thorough wound debridement. Healthy bleeding tissue is visualized at the wound base with resolution of overt infection

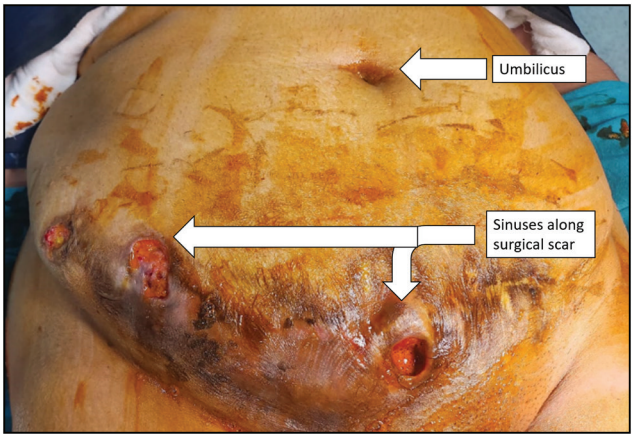


Figure 3: Recurrent sinus tracts 1 year after mesh explantation. Clinical photograph obtained 1 year after initial mesh explantation, showing multiple sinus openings (approximately 2 cm × 2 cm) along the prior scar line

pattern. Following optimal medical management and daily wound irrigation with normal saline, a contrast-enhanced computed tomography was done. Imaging demonstrated a large defect (12 cm × 14 cm) in the infraumbilical anterior abdominal wall with a herniating sac containing the cecum, proximal ascending colon, and distal ileal loops along with mesenteric fat, suggesting an incisional hernia. An ill-defined hypodense collection with air pockets (3.5 cm × 9.4 cm × 4.0 cm) was noted in the subcutaneous plane at the pubic and suprapubic regions extending along soft tissue over the hernial sac [Figure 4]. The patient was planned for surgical management after thorough evaluation that included debridement, tissue biopsy to exclude malignancy, and abdominal wall reconstruction.

The patient was kept in the supine position under combined general and epidural anesthesia, a pneumoperitoneum was created with a Veress needle via Palmer's point, and a 5-mm camera port was placed. A large lower abdominal wall defect of about 15 cm × 16 cm was visualized, with the omentum and small bowel herniating through it. Remnants of a previous polypropylene mesh were also noted within the defect [Figure 5A]. After noting the intraabdominal findings, the laparoscopic port was removed, and wide excision of the abdominal wall wound was done, including the previous surgical scar, the sinuses, thinned-out lower abdominal skin, hernial sac, and the remnants of the polypropylene mesh [Figure 5B], leaving a defect of 20 cm × 18 cm. The peritoneal layer was closed with 2-0 polyglactin sutures covering the abdominal viscera [Figure 6A]. A 20 cm × 25 cm biological mesh was placed over the peritoneum and the rectus muscle laterally, with an overlay of 5 cm on all sides. The mesh was sutured to the edge of the defect as the inner crown with 2-0 polypropylene [Figure 6b]. 14Fr suction drains were placed in the subcutaneous plane, and the skin was closed in layers [Figure 7]. The excised tissue was sent for histopathological examination (HPE). The total operative time was 4.5 h.

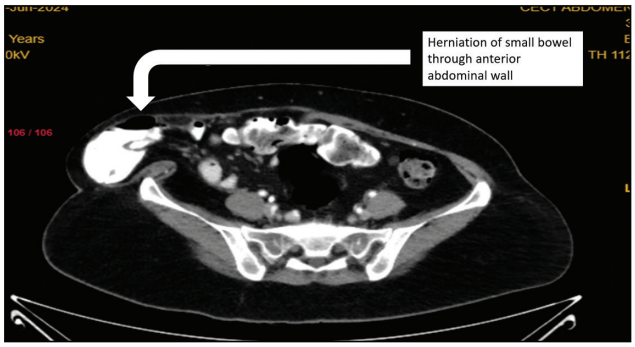


Figure 4: Contrast-enhanced computed tomography (CT) showing large lower abdominal incisional hernia. Contrast-enhanced CT of the abdomen demonstrating a large infraumbilical anterior abdominal wall defect with herniation of the cecum, ascending colon, ileal loops, and mesenteric fat

Dressing was done on the second postoperative day, margins were healthy, there was no discharge from the incision line, and drain output was minimal and serous. She was discharged on postoperative day 8; suture removal was done 3 weeks from the surgery date, after the incision had healed well, and no discharge or skin necrosis was noted.

Histopathological examination (HPE) of the excised tissue demonstrated features of high-grade malignant trophoblastic neoplasm, consistent with choriocarcinoma, and angiovascular and perineural invasion was noted [Figure 8]. A second pathological review of the slides was sought due to the unusual findings, which confirmed the initial diagnosis of choriocarcinoma. Immunohistochemical staining was positive for β-hCG, CK, and CD10, confirming the diagnosis [Figure 9A–C].

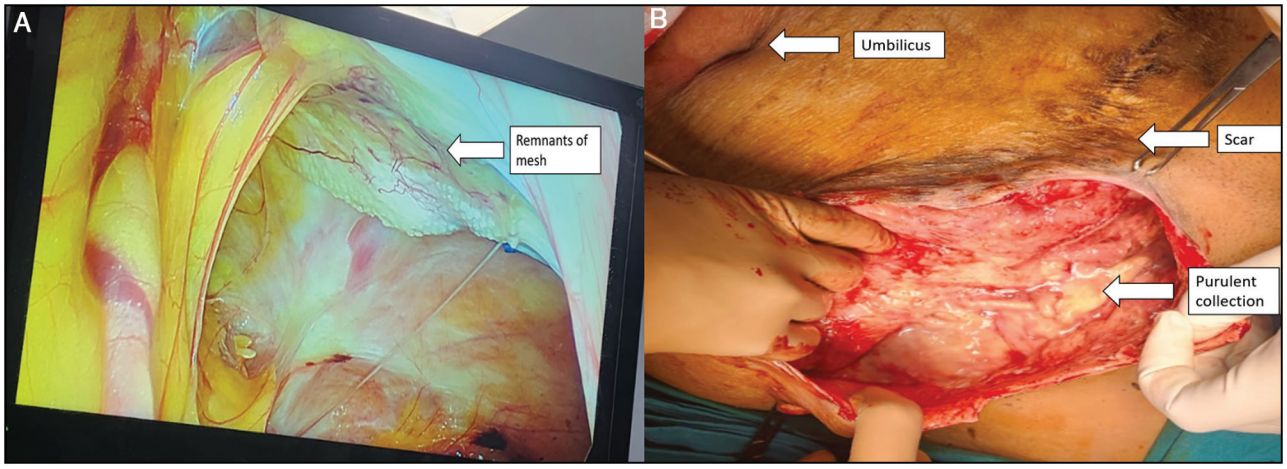


Figure 5: Laparoscopic and open intraoperative findings. (A) Laparoscopic image showing the omentum and small bowel adherent to the hernial sac, with remnants of the polypropylene mesh identified within the peritoneal cavity. (B) Open surgical field demonstrating purulent, necrotic tissue in the suprapubic subcutaneous plane following incision and exposure

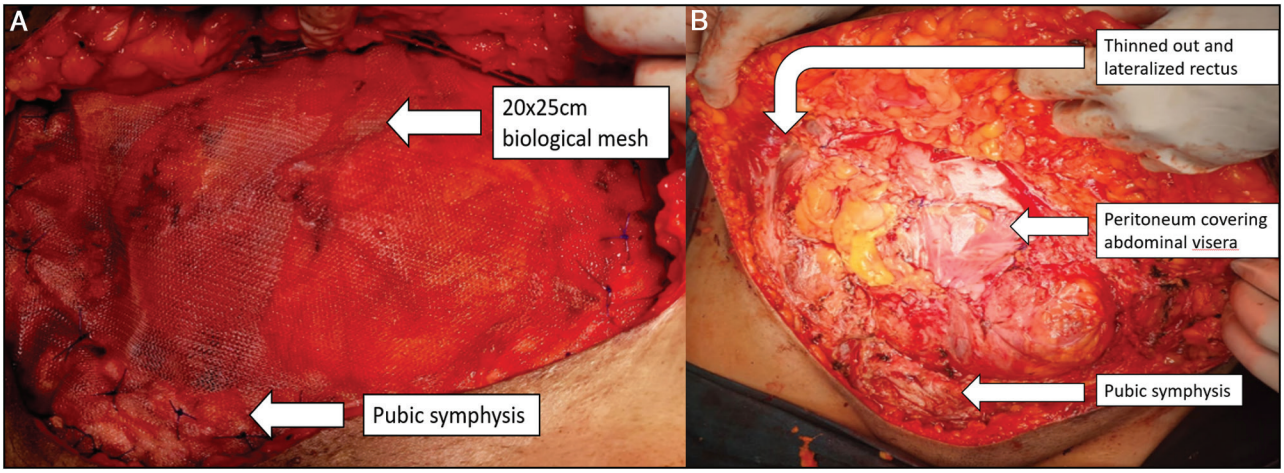


Figure 6: Reconstruction with biological mesh following wide abdominal wall excision. A. Intraoperative image after complete excision of the infected scar, sinus tracts, hernial sac, and retained mesh, showing approximation of the thinned peritoneum over the exposed bowel. B. Placement and fixation of a 20 cm × 25 cm biological mesh onlay



Figure 7: Postoperative wound appearance with drains *in situ*. Clinical image showing the closed abdominal incision with bilateral 14 F suction drains positioned in the subcutaneous plane

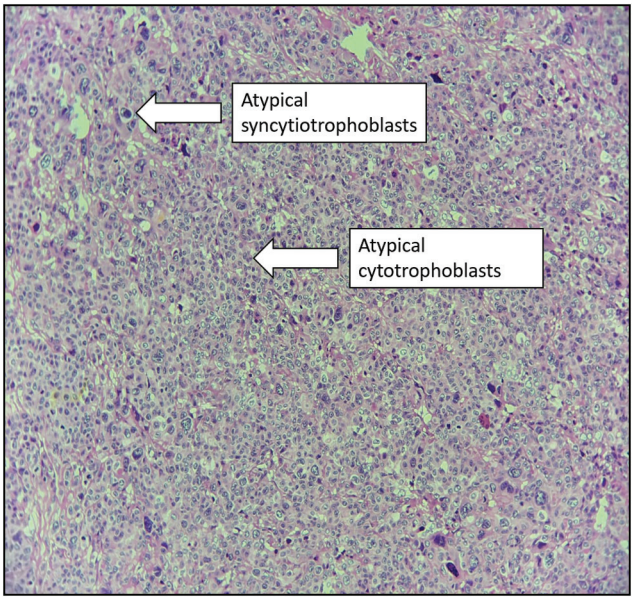


Figure 8: Histopathology demonstrating high-grade choriocarcinoma. Hematoxylin and eosin-stained section showing biphasic trophoblastic proliferation composed of cytotrophoblasts and multinucleated syncytiotrophoblasts with marked atypia, brisk mitosis, extensive hemorrhage, and necrosis. Angioinvasion and perineural invasion are evident

No additional germ cell elements were observed. After discussing the case in a multidisciplinary tumor board meeting, she was deemed to have high-risk gestational trophoblastic neoplasia [Figure 7]. Four weeks post-surgery, she received etoposide, methotrexate, and dactinomycin alternating with cyclophosphamide and vincristine (EMA-CO) regimen, of which six cycles were given. She had an uneventful recovery and has remained on regular follow-up for the past 2 years, with no evidence of recurrent wound infection or malignant disease to date [Figure 10].

Discussion

The patient's presentation was consistent with a chronic mesh-related infection following incisional hernia repair, with persistent sinus formation and failure of wound healing despite repeated interventions. Initial management appropriately focused on infection control and wound care. However, lack of sustained clinical resolution over a prolonged period represents a key warning sign that should prompt reconsideration of the underlying diagnosis.

Mesh infection remains a challenging complication after hernia repair, with the reported incidence ranging from 1% to 8% depending on patient factors, mesh type, and surgical technique.[8-10] Its pathogenesis is largely driven by bacterial colonization and biofilm formation, which limits antibiotic penetration and contributes to chronicity.[8] While most cases follow a predictable clinical course, persistent or recurrent infections despite adequate source control should raise suspicion for alternative or additional pathology.

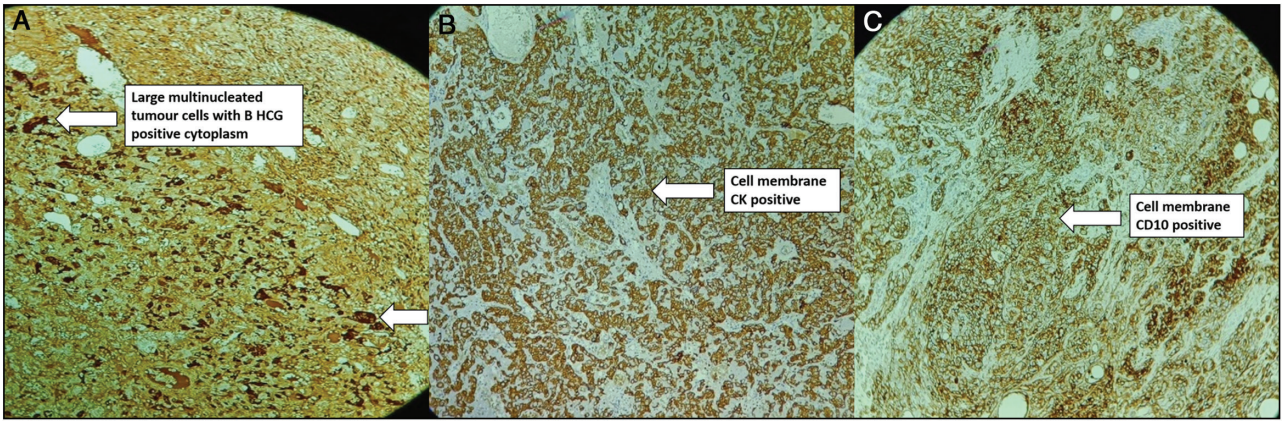


Figure 9: Immunohistochemistry confirming trophoblastic differentiation. A. β-hCG immunostaining showing strong cytoplasmic positivity in syncytiotrophoblastic cells. B. Cytokeratin staining highlighting epithelial differentiation of the tumor cells. C. CD10 immunoreactivity supporting trophoblastic origin. These findings confirm the diagnosis of choriocarcinoma

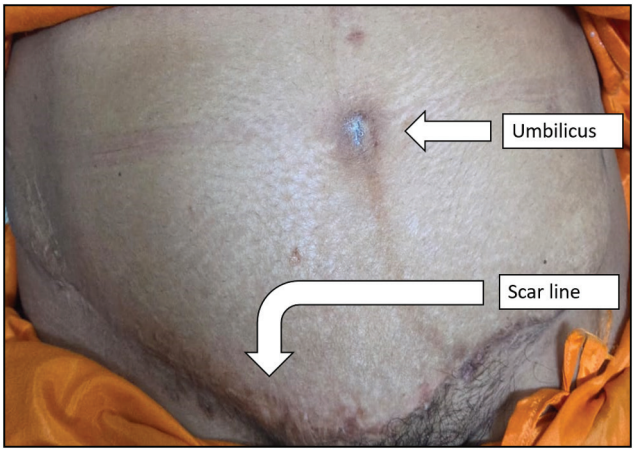


Figure 10: Long-term postoperative result at the 2-year follow-up. Clinical photograph taken 2 years after biological mesh reconstruction showing a well-healed abdominal wall, with no recurrence of sinus formation, hernia, or signs of malignancy

In contaminated or chronically infected fields, biological and biosynthetic meshes are increasingly utilized due to their relative resistance to infection and ability to integrate with the host tissue.[11-13] Their scaffold supports neovascularization and remodeling, allowing for durable reconstruction in high-risk settings. In this case, the use of biological mesh enabled effective abdominal wall reconstruction with an uneventful postoperative recovery.

The incidental identification of high-grade choriocarcinoma within the excised tissue is highly unusual. Choriocarcinoma most commonly arises from gestational trophoblastic tissue, and extrauterine forms are rare and frequently associated with delayed or atypical presentations.[6,7] In this patient, the chronic inflammatory milieu and repeated surgical interventions likely obscured the underlying malignancy.

This case underscores the importance of maintaining diagnostic vigilance in nonresolving SSIs. Histopathological evaluation should be strongly considered in recurrent or atypical wounds, particularly when the clinical course is discordant with standard management. A possible explanation in this case is implantation of trophoblastic elements during prior surgery, followed by delayed malignant transformation, as described in rare case reports of extrauterine trophoblastic neoplasia.[7]

Conclusion

Chronic or recurrent postoperative infections may rarely mask an underlying malignancy, as demonstrated by this incidental extrauterine choriocarcinoma. Persistent or atypical wound presentations following incisional hernia repair should prompt consideration of alternative diagnoses beyond infection. Routine histopathological evaluation of excised tissue in such cases is essential to avoid missed or delayed diagnosis.

In this case, a biological mesh was utilized for abdominal wall reconstruction in a contaminated surgical field, with a satisfactory postoperative outcome. However, larger studies are needed to better define its role and long-term outcomes in contaminated abdominal wall reconstruction. This case report highlights the importance of maintaining diagnostic vigilance and adopting a multidisciplinary approach to optimize outcomes in complex abdominal wall pathology.

Author contribution

KVMKG: conceptualization, surgical management, literature review, and drafting of the manuscript. NR: operative assistance, data collection, writing—review and editing, and corresponding author responsibilities. RRB: oncological evaluation, chemotherapy management, data interpretation, and critical revision of the manuscript. SS: histopathological evaluation and critical revision of the manuscript. PRKP: contributed expert input on abdominal wall reconstruction and provided critical

revision of the manuscript. All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

Ethical policy and institutional Review Board statement

This study was conducted in accordance with the ethical standards of the Institutional (Apollo Hospital Health City) and/or National Research Committee (India) and with the principles of the Declaration of Helsinki (as revised in 2013). Written informed consent was obtained from the patient for participation and for publication of this case report and accompanying images.

Declaration of patient consent consent

Written informed consent for publication of this case and accompanying clinical details was obtained from the patient. All personal identifiers have been removed to maintain confidentiality.

Data availability statement

Not applicable.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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