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Case-Report

Giant Desmoid-Type Fibromatosis of the Anterior Abdominal Wall in a Young Woman Following Caesarean Section: A Case Report

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Abstract: ***Introduction:*** Desmoid-type fibromatosis is a rare, locally aggressive fibroblastic neoplasm with no metastatic potential but an unpredictable tendency for infiltration and recurrence. Anterior abdominal wall tumours are clinically important because they can occur in young women and may be associated with pregnancy, prior abdominal surgery, and scar-related tissue injury.**Case presentation:** A 21-year-old woman presented with a progressively enlarging lower abdominal wall mass for one year. The swelling was initially approximately 2 x 1 cm and enlarged to about 8 x 6 cm. She had undergone lower-segment caesarean section three years earlier and laparoscopic cholecystectomy one year earlier, with no known comorbidities. Examination revealed a hard, immobile, well-defined 10 x 8 cm mass in the hypogastric and right iliac regions. Magnetic resonance imaging demonstrated a well-defined lobulated heterogeneous soft-tissue lesion in the intramuscular plane of the right paramedian anterior abdominal wall, extending across the right iliac and suprapubic regions, measuring approximately 7.7 x 10.2 x 3.2 cm with central scarring. Biopsy showed spindle cells arranged in sweeping fascicles, suggestive of aggressive fibromatosis. The patient underwent wide local excision of the tumour with anterior abdominal wall reconstruction using a 30 x 30 cm polypropylene mesh. Grossly, the specimen measured 14 x 12 x 7.5 cm and weighed 3.32 kg. Histopathology confirmed fibromatosis without necrosis, with a mitotic rate of 1 per 10 high-power fields, and all margins were free of tumour. Immunohistochemistry showed beta-catenin positivity and a Ki-67 index of approximately 1%.**Conclusion:** This case highlights the diagnostic and reconstructive challenges of large anterior abdominal wall desmoid-type fibromatosis in a young woman with prior abdominal surgery. Complete excision with mesh reconstruction remains appropriate in selected symptomatic or progressive abdominal wall disease, while modern management requires multidisciplinary assessment, patient-specific treatment selection, and long-term surveillance.

Keywords: Desmoid tumour; desmoid-type fibromatosis; aggressive fibromatosis; anterior abdominal wall; caesarean section; polypropylene mesh; case report

INTRODUCTION

Desmoid-type fibromatosis, also called aggressive fibromatosis, is an uncommon clonal fibroblastic/myofibroblastic neoplasm. It is histologically benign in the sense that it lacks metastatic potential, yet it can behave aggressively through local infiltration, pain, functional impairment, and recurrence after treatment [2-4]. Reported annual incidence is low, generally in the range of a few cases per million population, and the clinical course can vary from spontaneous stabilization or regression to persistent local progression [2-4].

Abdominal wall desmoid tumours are classically associated with young women and have been described after pregnancy and abdominal surgery. They can arise from musculoaponeurotic structures such as the rectus sheath, rectus abdominis, oblique muscles and transversalis fascia, producing a firm mass that may clinically mimic other postoperative abdominal wall lesions, including scar endometriosis, incisional hernia, hematoma, granuloma, or soft-tissue sarcoma [8,9].

The management paradigm for desmoid tumours has evolved. Active surveillance is now a widely accepted initial strategy for many asymptomatic or minimally symptomatic primary and recurrent tumours, while surgery, radiotherapy, local ablative therapies and systemic treatments are selected according to tumour site, symptoms, progression, morbidity of treatment and patient preference [2,3]. For selected abdominal wall tumours with rapid growth, symptoms, or substantial reconstructive feasibility, wide local excision with durable abdominal wall reconstruction remains an important treatment option. This case report describes a giant anterior abdominal wall desmoid-type fibromatosis in a young woman with previous caesarean section,

managed by wide excision and polypropylene mesh reconstruction. The report is structured according to the CARE case-report framework [1].

CASE PRESENTATION

Patient information

A 21-year-old woman presented with a progressively enlarging abdominal wall mass of one year duration. The swelling was initially approximately 2 x 1 cm and gradually increased to about 8 x 6 cm. She had a history of lower-segment caesarean section three years prior and laparoscopic cholecystectomy one year prior. No known comorbidities were documented. Family history, menstrual association of symptoms, obstetric interval details and prior evaluation for familial adenomatous polyposis or Gardner syndrome should be added if available before journal submission.

Clinical findings

On examination, a hard, immobile, well-defined mass measuring approximately 10 x 8 cm was noted in the lower abdomen, involving the hypogastric and right iliac regions. The available presentation did not document skin ulceration, systemic symptoms, bowel symptoms, pain score or neurovascular deficit.

Diagnostic assessment

Baseline hematological investigations documented total leukocyte count of 9.3 x 10^3/uL, hemoglobin of 13.3 g/dL and platelet count of 140 x 10^3/uL. Magnetic resonance imaging showed a well-defined, lobulated, heterogeneous soft-tissue lesion in the intramuscular plane of the right paramedian anterior abdominal wall, involving the right iliac and suprapubic regions. The lesion measured approximately 7.7 x 10.2 x 3.2 cm and showed central scarring.

Four-quadrant biopsy demonstrated spindle cells arranged in sweeping fascicles, supporting the diagnosis of aggressive fibromatosis. Based on clinical, radiological and biopsy findings, the provisional diagnosis was aggressive fibromatosis of the anterior abdominal wall.

Therapeutic intervention

The patient underwent wide local excision of the desmoid tumour with anterior abdominal wall reconstruction using polypropylene mesh. Intraoperatively, an ovoid mass measuring approximately 15 x 10 cm was identified, enclosing or involving the right rectus abdominis, external oblique, internal oblique and transversalis fascia. The involved preperitoneal layer was excised. The resection included the right rectus abdominis, external oblique, internal oblique and transversalis fascia, with a 2 cm margin of the left rectus abdominis as documented in the source presentation. A 30 x 30 cm polypropylene mesh was used for anterior abdominal wall reconstruction.

Histopathology and immunohistochemistry

The excised specimen measured 14 x 12 x 7.5 cm and weighed 3.32 kg. Microscopy showed spindle cells arranged in sweeping fascicles with pale cytoplasm and bland nuclei in a collagenous stroma. The tumour was reported as fibromatosis without necrosis, with a low mitotic rate of 1 per 10 high-power fields. All surgical margins were free of tumour. Immunohistochemistry showed beta-catenin positivity and a Ki-67 proliferation index of approximately 1%, supporting desmoid-type fibromatosis.

Follow-up and outcomes

Postoperative course

The postoperative course was uneventful, and the patient recovered satisfactorily. Two surgical drains were placed intraoperatively: one ADK drain and one Romovac drain positioned above the mesh. The Romovac drain demonstrated minimal output and was removed on postoperative day 4. The surgical wound remained healthy throughout the postoperative period, with no evidence of wound-related complications. Sutures were removed on postoperative day 10, and the patient was discharged in stable condition on postoperative day 6. Postoperative management included intravenous ceftriaxone for antibiotic prophylaxis and adequate analgesia with paracetamol. No postoperative complications were observed.

Follow-up: The patient was followed up for 1 year. On clinical examination, the surgical scar was well healed and healthy. There was no evidence of local recurrence, abdominal wall hernia, or abdominal wall laxity. The patient continued to wear an abdominal binder during the postoperative period, and the abdominal wall demonstrated good structural integrity with satisfactory functional strength. Overall, the postoperative course was uneventful, with no clinical evidence of recurrence or compromise of the abdominal wall at the 1-year follow-up.

Clinical Timeline

Time point	Event	Key findings
3 years before presentation	Lower-segment caesarean section	Prior lower abdominal surgical scar documented.
1 year before presentation	Laparoscopic cholecystectomy; abdominal wall mass first noticed	Mass initially approximately 2 x 1 cm.
At presentation	Clinical evaluation	Mass enlarged to about 8 x 6 cm; examination showed a hard, immobile, well-defined 10 x 8 cm lower abdominal mass.
Preoperative imaging	MRI abdomen/pelvis	Right paramedian anterior abdominal wall intramuscular lesion measuring approximately 7.7 x 10.2 x 3.2 cm with central scarring.
Preoperative tissue diagnosis	Four-quadrant biopsy	Spindle cells in sweeping fascicles, suggestive of aggressive fibromatosis.
Definitive treatment	Wide local excision and mesh reconstruction	15 x 10 cm intraoperative mass involving abdominal wall musculature and fascia; 30 x 30 cm polypropylene mesh reconstruction.
Final pathology	Histopathology and immunohistochemistry	14 x 12 x 7.5 cm, 3.32 kg fibromatosis; negative margins; beta-catenin positive; Ki-67 approximately 1%.
Postoperative period	Outcome and surveillance	[Insert final follow-up details before submission].

FIGURES

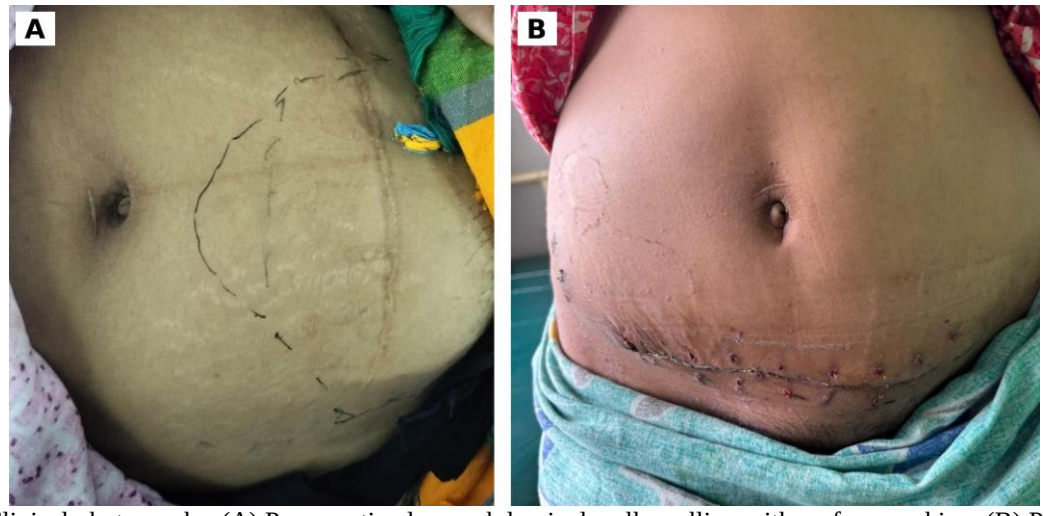


Figure 1. Clinical photographs. (A) Preoperative lower abdominal wall swelling with surface marking. (B) Postoperative abdominal wall appearance after wide local excision and reconstruction. Confirm written patient consent for publication of clinical images before submission.

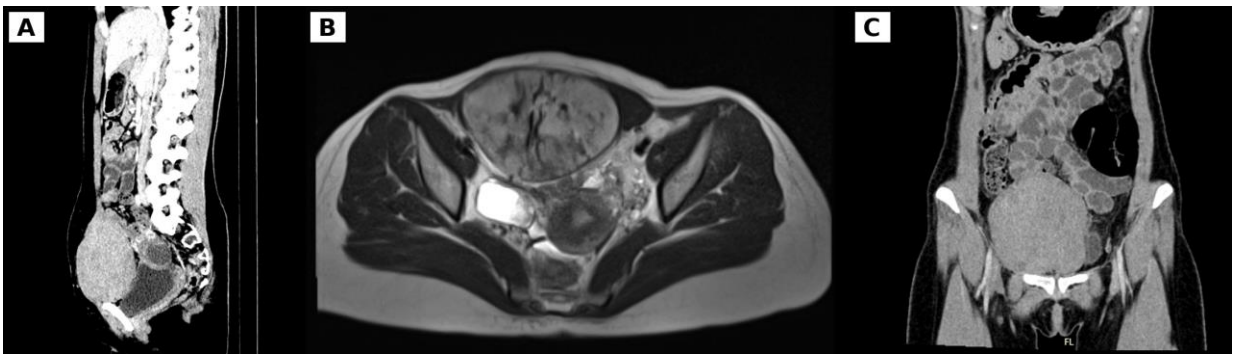


Figure 2. MRI images demonstrating the anterior abdominal wall mass. (A) Sagittal image, (B) axial image, and (C) coronal image showing a right paramedian intramuscular anterior abdominal wall lesion in the right iliac/suprapubic region with central scarring.

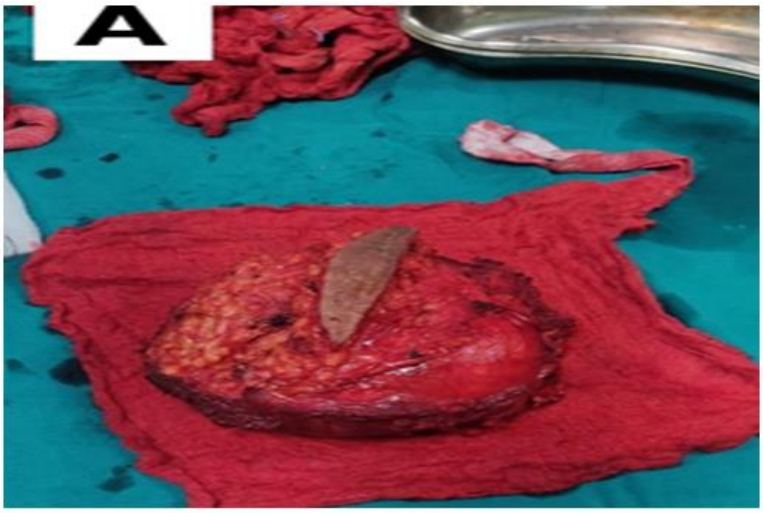
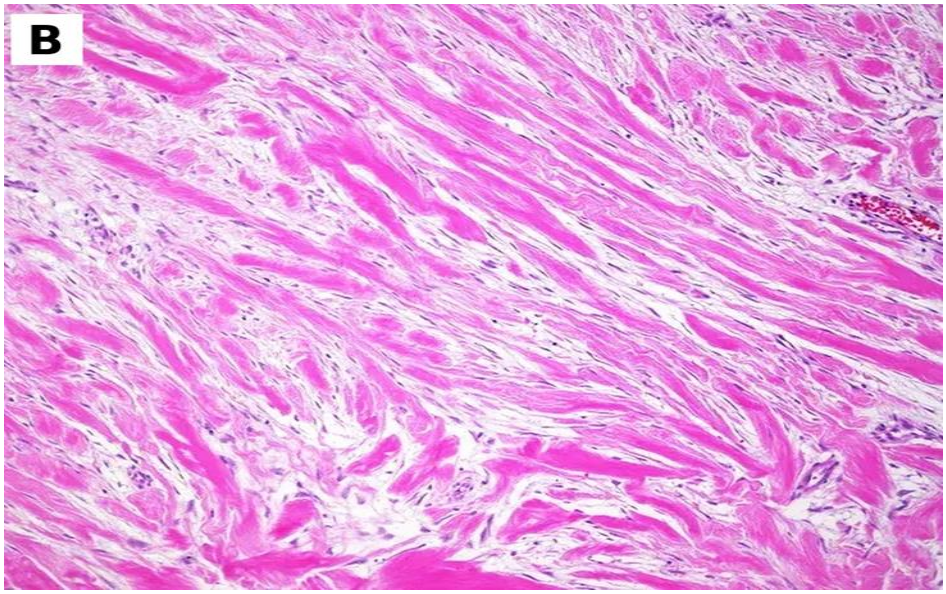


Figure 3. Operative and histopathological findings. (A) Gross excised specimen. (B) Hematoxylin and eosin section showing bland spindle cells arranged in sweeping fascicles within collagenous stroma, consistent with desmoid-type fibromatosis.



DISCUSSION

This case demonstrates several characteristic features of abdominal wall desmoid-type fibromatosis: young age, female sex, prior lower abdominal surgery, progressive growth, intramuscular/anterior abdominal wall location, spindle-cell morphology, beta-catenin positivity and a low proliferative index. The history of lower-segment caesarean section is clinically relevant because abdominal wall desmoid tumours have been reported in association with pregnancy, estrogen exposure and previous operative trauma. The lesion in this case arose in the right paramedian anterior abdominal wall, involving the rectus and oblique musculature and fascia, requiring oncological resection and complex parietal reconstruction.

MRI is valuable for defining the compartment of origin, relationship to the rectus and oblique muscles, fascial involvement, depth of extension and reconstructive requirements. Central scarring and low-to-intermediate signal collagenous components can support the diagnosis, although histopathology is required for confirmation. Typical microscopic features include bland spindle cells in long sweeping fascicles within a collagenous stroma. Nuclear beta-catenin immunoreactivity, often reflecting Wnt/beta-catenin pathway activation, helps support the diagnosis of desmoid-type fibromatosis and distinguish it from other spindle-cell lesions [4].

The treatment of desmoid tumours has changed substantially over the past decade. Historically, wide local excision was often considered first-line therapy. Current consensus-based approaches emphasize initial active surveillance for many patients, because some tumours stabilize or regress spontaneously and surgery may be associated with morbidity and recurrence [2,3]. However, treatment is individualized. Surgery remains appropriate when tumours are progressive, symptomatic, threatening function or anatomy, technically resectable with acceptable morbidity, or when the abdominal wall defect can be reliably reconstructed [2,3,8,9].

In this patient, surgery was chosen for a large progressive anterior abdominal wall tumour involving multiple layers of the abdominal wall. Wide local excision achieved negative margins, and polypropylene mesh reconstruction restored abdominal wall continuity. Similar reports have described the need for mesh-reinforced repair after resection of abdominal wall desmoid tumours, particularly when the rectus muscle, oblique muscles, fascia or preperitoneal plane are involved [8,9].

Local recurrence remains a major concern in desmoid-type fibromatosis, even after macroscopically complete excision. Negative margins are reassuring but do not eliminate recurrence risk. Long-term clinical and radiological surveillance should therefore be documented, including recurrence status, abdominal wall integrity, wound complications, chronic pain, mesh-related issues and functional recovery. Because a minority of cases are associated with familial adenomatous polyposis or Gardner syndrome, family history and appropriate gastrointestinal/genetic evaluation should be considered, especially in young patients, multifocal disease, intra-abdominal disease, or suggestive family history [2-4].

For unresectable, recurrent, progressive or symptomatic disease where surgery would cause unacceptable morbidity, nonoperative options include continued surveillance, radiotherapy in selected cases, local ablative techniques, systemic therapy with tyrosine kinase inhibitors such as sorafenib, chemotherapy regimens, hormonal/anti-inflammatory approaches in selected contexts, and newer gamma-secretase inhibition for progressing disease requiring systemic treatment [2,3,6,7].

Learning Points

A progressively enlarging abdominal wall mass in a young woman with previous caesarean section should include desmoid-type fibromatosis in the differential diagnosis.

MRI helps define the muscle and fascial planes involved, but definitive diagnosis requires histopathology and supportive immunohistochemistry such as beta-catenin positivity.

Selected large or progressive abdominal wall desmoid tumours can be managed by wide excision with mesh reconstruction, but long-term recurrence surveillance and assessment for syndromic association are essential.

CONCLUSION

Giant desmoid-type fibromatosis of the anterior abdominal wall is rare but should be suspected in young women with a progressively enlarging postoperative abdominal wall mass. In this case, MRI, biopsy, histopathology and beta-catenin-positive immunohistochemistry established the diagnosis. Wide local excision with negative margins and polypropylene mesh reconstruction provided definitive local treatment for a large progressive lesion involving the rectus and oblique musculature. Complete documentation of postoperative recovery, recurrence surveillance and FAP/Gardner syndrome assessment will strengthen the final manuscript for journal submission.

Declarations

Competing interests: The authors declare no competing interests.

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Data availability: Data sharing is not applicable to this article because no datasets were generated or analysed. Relevant clinical details are contained within the manuscript, subject to patient confidentiality and institutional policy.

REFERENCES

1. Gagnier JJ, Kienle G, Altman DG, Moher D, Sox H, Riley D; CARE Group. The CARE guidelines: consensus-based clinical case report guideline development. J Med Case Rep. 2013;7:223. doi:10.1186/1752-1947-7-223.
2. Desmoid Tumor Working Group. The management of desmoid tumours: a joint global consensus-based guideline approach for adult and paediatric patients. Eur J Cancer. 2020;127:96-107. doi:10.1016/j.ejca.2019.11.013.
3. Kasper B, Baldini EH, Bonvalot S, et al. Current management of desmoid tumors: a review. JAMA Oncol. 2024;10(8):1121-1128. doi:10.1001/jamaoncol.2024.1805.
4. Bektas M, Bell T, Khan S, Tumminello B, Fernandez MM, Heyes C, Oton AB. Desmoid tumors: a comprehensive review. Adv Ther. 2023;40(9):3697-3722. doi:10.1007/s12325-023-02592-0.
5. Cuomo P, Scoccianti G, Schiavo A, et al. Extra-abdominal desmoid tumor fibromatosis: a multicenter EMSOS study. BMC Cancer. 2021;21:437. doi:10.1186/s12885-021-08189-6.

6. Gounder MM, Mahoney MR, Van Tine BA, et al. Sorafenib for advanced and refractory desmoid tumors. N Engl J Med. 2018;379(25):2417-2428. doi:10.1056/NEJMoa1805052.
7. Gounder M, Ratan R, Alcindor T, et al. Nirogacestat, a gamma-secretase inhibitor for desmoid tumors. N Engl J Med. 2023;388(10):898-912. doi:10.1056/NEJMoa2210140.
8. Ascari F, Segattini S, Varoli M, Beghi M, Muratori S, Scotto B, Gasperoni M. Abdominal wall reconstruction for desmoid tumour surgery: case report. Int J Surg Case Rep. 2019;64:6-9. doi:10.1016/j.ijscr.2019.09.010.
9. Economou A, Pitta X, Andreadis E, Papapavlou L, Chrissidis T. Desmoid tumor of the abdominal wall: a case report. J Med Case Rep. 2011;5:326. doi:10.1186/1752-1947-5-326.