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Intramuscular Desmoid Tumor of the Anterior Abdominal Wall in a Young Female: A Case Report with Surgical Excision and Favorable Follow-Up Outcome

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Abstract

Desmoid tumours, also known as aggressive fibromatosis, are rare benign mesenchymal neoplasms characterised by infiltrative local growth and a high tendency for recurrence despite the absence of metastatic potential. This case report describes a 31-year-old female who presented with a painful anterior abdominal wall mass arising from the right rectus abdominis muscle. Diagnosis was established through imaging and histopathological examination. The patient underwent complete surgical excision performed by the author, followed by structured postoperative surveillance. Long-term follow-up demonstrated no clinical or radiological evidence of recurrence. This case emphasises the importance of early diagnosis, precise imaging, complete excision, and regular follow-up in achieving optimal outcomes.

Keywords: Desmoid tumour, aggressive fibromatosis, abdominal wall tumour, intramuscular tumour, surgical excision, case report

1. Introduction

Desmoid tumours are rare fibroblastic neoplasms originating from musculoskeletal structures and account for approximately 0.03% of all neoplasms and less than 3% of soft tissue tumours [1]. Although histologically benign, they demonstrate aggressive local invasion, and their management remains challenging because of their tendency to recur [2].

Risk factors include female gender, pregnancy-related hormonal influences, and prior abdominal surgeries [3]. The anterior abdominal wall is a common location, particularly in women of reproductive age. This report presents a surgically managed case of an intramuscular desmoid tumour with a favourable long-term outcome.

Case Presentation

A 31-year-old female was admitted to **Sukhayu Maternity and Nursing Home, Nashik** on **10 December 2024** with complaints of:

- Lower abdominal pain and cramps for two days
- Urinary urgency and frequency
- Bloating and sensation of bladder fullness
- Nausea, anorexia, and abdominal discomfort
- Presence of a hard, palpable swelling in the lower abdomen

Past Surgical History

The patient had undergone:

- **Laparoscopic ovarian cystectomy – 2013**
- **Appendectomy – 2015**
- **Lower Segment Cesarean Section (LSCS) – March 2020**

There was **no family history of familial adenomatous polyposis (FAP) or malignancy**.

Clinical Examination

On admission, vital signs were stable:

- Pulse: 82/min
- Blood Pressure: 120/70 mmHg
- Respiratory Rate: 20/min\
- Temperature: 98.4°F
- SpO_2: 98%
- Weight: 71.4 kg

Local abdominal examination revealed a firm, tender, immobile mass in the right lower abdominal wall.

Investigations

Radiological Evaluation

Ultrasound Abdomen and Pelvis (09 December 2024):

Revealed a well-defined heterogeneous hypoechoic lesion in the anterior abdominal wall measuring approximately **5.6 × 4.7 × 4.2 cm**, suspicious for a desmoid tumour.

Contrast-Enhanced CT Scan (10 December 2024):

Demonstrated a well-defined homogeneously enhancing oval soft tissue mass arising from the **right rectus abdominis muscle**, suggestive of a **desmoid tumour**.

Laboratory Findings

Routine investigations were within normal limits:

- Haemoglobin: 13.6 g/dL
- Total leukocyte count: 7.97 × 10^3/µL
- Platelets: 366 × 10^3/µL
- Liver and renal function tests: Within normal limits

Surgical Management

The patient underwent surgery on **11 December 2024**.

- **Procedure:** Excision of intramuscular desmoid tumour
- **Anaesthesia:** Spinal anaesthesia
- **Operating Surgeon: Dr Sachin Jadhav, M.S. (General Surgery)**

Intraoperative Findings

- Tumour localised within the **right rectus abdominis muscle**
- Tumor size approximately **9 × 8 × 6 cm**
- Firm, well-defined mass, adherent to surrounding muscle fibres
- No intraperitoneal extension
- No lymphadenopathy
- Minimal blood loss

The tumour was excised **en bloc with clear margins**, and the specimen was submitted for

histopathological evaluation.

Histopathology

Histopathological examination confirmed **desmoid tumour (aggressive fibromatosis)** with **tumour-free resection margins**.

Postoperative Course

The postoperative period was uneventful except for transient headache and nausea, which were managed conservatively. The patient remained hemodynamically stable and was discharged on **15 December 2024** with standard postoperative advice and medications.

Follow-Up and Outcome

A follow-up **Ultrasound Abdomen and Pelvis performed on 04 June 2025** revealed:

- No residual or recurrent mass
- No solid lesion at the surgical site
- Only minimal superficial fluid pockets with no deeper extension

On clinical examination, the patient remained:

- Asymptomatic
- Free of pain
- Without palpable mass

There was **no clinical or radiological evidence of recurrence** at the latest follow-up.

Discussion

Desmoid tumours represent a challenging clinical entity due to their infiltrative nature and high recurrence potential. Complete surgical excision with clear margins remains the most effective therapeutic approach for localised symptomatic tumours [4]. Prior abdominal surgeries and hormonal factors may contribute to tumour development.

In the present case, meticulous surgical technique and structured follow-up resulted in an excellent outcome without evidence of recurrence.

Conclusion

This case demonstrates that early diagnosis, accurate imaging, complete surgical excision, and regular follow-up can lead to excellent outcomes in intramuscular desmoid tumours. Long-term surveillance remains essential to detect potential recurrence.

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