Aggressive fibromatosis resulting in incomplete intestinal obstruction: A case report

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Received February 2, 2026; Accepted March 18, 2026

DOI: 10.3892/etm.2026.13162

Abstract. Aggressive fibromatosis (AF) is a rare borderline tumor characterized by locally infiltrative growth and a high risk of recurrence, but no metastatic potential. Intra-abdominal AF may present with nonspecific symptoms and is often misdiagnosed due to its overlapping imaging features with more common mesenchymal tumors. Within the present study, a case of incomplete small bowel obstruction caused by abdominal AF in a 45-year-old male is presented. In August 2025, the patient initially presented to Qianjiang Central Hospital (Qianjiang, China) with abdominal pain and obstructive symptoms. Abdominal CT scan identified a large soft-tissue mass leading to small intestinal obstruction. In October 2025, the patient underwent surgical resection. Histopathological analysis determined the diagnosis of AF, with immunohistochemical staining demonstrating nuclear positivity for β-catenin. Postoperative recovery was uneventful. The present case demonstrated that AF, although uncommon, should be included in the differential diagnosis of abdominal masses associated with bowel obstruction. Definitive diagnosis depends on histopathology and comprehensive immunohistochemical evaluation. For symptomatic cases, complete surgical excision is the mainstay of treatment and long-term follow-up is warranted due to the potential for local recurrence.

Introduction

Aggressive fibromatosis (AF) is a rare localized aggressive tumor characterized by monoclonal proliferation of fibroblasts/muscle-derived fibroblasts. It is also known as ligamentous-type fibromatosis, deep musculoaponeurotic fibromatosis or hard fibroma. The biological behavior lies between benign and malignant and is classified as a borderline tumor, with the clinical features of local infiltration and local recurrence tendency, but no distant metastasis (1,2). The incidence rate of this disease is 2.10-5.36/1,000,000 individuals and is more common in female patients (3). Although clinically uncommon, AF can arise in numerous anatomical sites, with intra-abdominal/pelvic locations being particularly challenging due to their potential to cause bowel obstruction, pain or compressive symptoms, often necessitating clinical intervention. Preoperative diagnosis remains difficult, as imaging features are non-specific and frequently mimic more common abdominal tumors such as gastrointestinal stromal tumors (GIST) or solitary fibrous tumors, leading to a high rate of misdiagnosis (4). Definitive diagnosis relies on postoperative histopathology and systematic immunohistochemical profiling, notably the nuclear expression of β-catenin (5). While surgical resection remains an established method for treating symptomatic AF, management has evolved from a purely surgical approach toward multimodal strategies encompassing active surveillance, systemic therapy and individualized intervention (6). Particularly in intra-abdominal AF, balancing symptom control, recurrence risk reduction and avoidance of overtreatment continues to pose clinical challenges. The present study outlines a case of intra-abdominal AF presenting with small bowel incomplete obstruction. The aim was to offer clinical insights that may aid in early recognition and standardized management of this rare entity.

Case report

A 45-year-old male patient reported intermittent lower abdominal pain without any obvious cause, accompanied by decreased anal gas expulsion and bowel movements. The patient presented to the Department of Gastrointestinal Surgery at The First People's Hospital of Xiantao (Xiantao, China) in October 2025. Upon physical examination, the abdomen appeared flat and soft, with a mass that could be felt, as well as poor mobility. Tenderness and rebound tenderness were reported in the lower abdomen, without muscle tension and the liver and spleen were not palpable. Furthermore, bowel sounds

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Key words: aggressive fibromatosis, pathology, soft connective tissue tumor, intestinal obstruction, immunohistochemical

were normal and no water-overflow sounds were recorded. The patient had previously been in good health and had no family history of genetic diseases or history of smoking. The patient initially presented to Qianjiang Central Hospital due to acute abdominal symptoms, as it was the nearest medical facility at the time of symptom onset. In August 2025, an abdominal CT scan conducted at Qianjiang Central Hospital (Qianjiang, China) using a Siemens Somatom Definition AS+ 128-slice CT scanner showed a soft tissue mass present in the lower abdomen accompanied by small intestinal obstruction (Fig. 1). The imaging parameters were as follows: Slice thickness, 5 mm; tube voltage, 120 kV; tube current, 200 mAsec; contrast agent (iopromide, 300 mg I/ml) was administered at a dose of 80 ml via intravenous injection at a rate of 3 ml/sec, with scanning performed during the arterial and portal venous phases. Following initial evaluation and CT imaging, which revealed a soft tissue mass causing small intestinal obstruction, the patient was transferred to The First People's Hospital of Xiantao. This transfer was arranged at the patient's and his family's request, as the patient is a local resident of Xiantao, and receiving treatment at this hospital would facilitate easier postoperative follow-up, better communication with medical staff and more convenient support from family members during hospitalization and recovery. In October 2025, a further abdominal enhanced CT scan conducted at The First People's Hospital of Xiantao (Xiantao, China) indicated a soft tissue mass in the lower abdomen, specifically the midline area of the pelvic cavity (49x56x63 mm), with moderate and uniform enhancement observed following CT enhancement (Fig. 2). In addition, the adjacent small intestine was dilated and filled with both gas and fluid. The diagnosis was a partial small intestinal obstruction. Tumor marker analysis was performed using serum samples collected from the patient, and the concentrations of tumor markers were measured by electrochemiluminescence immunoassay using a Cobas e801 immunoassay analyzer (Roche Diagnostics GmbH). The results were as follows: α-Fetoprotein, 1.77 ng/ml (reference range: 0.00-7.42 ng/ml); CEA, 0.70 ng/ml (reference range: 0.00-4.10 ng/ml); carbohydrate antigen (CA)-19-9, 2.88 U/ml (reference range: 0.00-27.50 U/ml); CA125, 13.30 U/ml (reference range: 0.00-37.22 U/ml); and CA153, 9.50 U/ml (reference range: 0.00-27.96 U/ml). All values were within normal reference ranges. Clinically, this was considered to be a GIST and on the same day of admittance, an abdominal laparotomy exploration, tumor resection and intestinal adhesion release surgery was performed.

Upon postoperative pathological examination, a gross appearance was recorded (Fig. 3) within a section of the intestinal tract, 32.5 cm in length and 2-3 cm in diameter. The intestinal tract was cut open, 20 cm from one side of the incision and 5 cm away from the other side. On the serosal side of the intestinal tract, a protuberant mass was observed. The size of the mass was 6.3x5.6x4.9 cm. The section was grayish-white and solid, with a firm texture. A small amount of mesenteric tissue was attached surrounding the mass and three lymph nodes were felt inside, with diameters ranging from 0.1 to 0.3 cm. The surgical margins were negative. Pathological diagnosis suggested small intestine invasive fibromatosis.

For histopathological examination, the resected specimen was fixed in 10% neutral-buffered formalin for 24 h at room temperature. After fixation, representative tissue sections were processed through a series of graded ethanol solutions (70, 80, 95 and 100%) for dehydration, cleared in xylene and embedded in paraffin wax. Serial sections were cut at a thickness of 4 μm using a rotary microtome, mounted on glass slides and dried overnight at 60˚C. For routine histopathological evaluation, sections were deparaffinized in xylene, rehydrated through graded ethanol and stained with hematoxylin and eosin (according to standard protocols. Light microscopy was performed using a BX53 microscope (Olympus Corp.) and images were captured with a digital camera system.

For differential diagnosis, immunohistochemical staining was performed. Immunohistochemical staining was performed on formalin-fixed, paraffin-embedded tissue sections (4 μm thick). Sections were deparaffinized in xylene and rehydrated through graded ethanol. Antigen retrieval was performed by heating sections in citrate buffer (pH 6.0) or EDTA buffer (pH 9.0) in a microwave oven for 15 min, depending on the antibody. Endogenous peroxidase activity was blocked with 3% hydrogen peroxide for 10 min. The sections were then incubated with primary antibodies overnight at 4˚C. The following primary antibodies were used: β-catenin (mouse monoclonal; cat. no. 610154; dilution 1:200; BD Biosciences), Ki67 (mouse monoclonal; cat. no. M7240; dilution 1:100; Dako; Agilent Technologies, Inc.), CD117 (c-KIT; rabbit monoclonal; cat. no. ab32363; dilution 1:200; Abcam), discovered on GIST1 (DOG-1; rabbit monoclonal; cat. no. ab192475; dilution 1:100; Abcam), signal transducer and activator of transcription 6 (STAT6; rabbit monoclonal; cat. no. ZA-0572; dilution 1:200; Beijing Zhongshan Jinqiao Biotechnology Co., Ltd.), S100 (S100; rabbit polyclonal; cat. no. Z0311; dilution 1:500; Dako; Agilent Technologies, Inc.), SRY-box transcription factor 10 (SOX10; rabbit monoclonal; cat. no. ZA-0624; dilution 1:100; Beijing Zhongshan Jinqiao Biotechnology Co., Ltd.), anaplastic lymphoma kinase (ALK; rabbit monoclonal; cat. no. 3633; prediluted; Roche Tissue Diagnostics), smooth muscle actin (SMA; cat. no. M0851), Desmin (cat. no. M0760;), CD34 (cat. no. M7165; all mouse monoclonal; dilution 1:200; Dako; Agilent Technologies, Inc.), succinate dehydrogenase complex subunit B (SDHB; mouse monoclonal; cat. no. ab14714; dilution 1:200; Abcam) and fumarate hydratase (FH; mouse monoclonal; cat. no. sc-100743; dilution 1:100; Santa Cruz Biotechnology, Inc.). After washing with PBS, the sections were incubated with horseradish peroxidase-conjugated secondary antibody (EnVision Detection System; cat. no. K4001; Dako; Agilent Technologies, Inc.) for 30 min at room temperature. Immunoreactivity was visualized using 3,3'-diaminobenzidine as the chromogen and sections were counterstained with hematoxylin. Positive and negative controls were included in each run to ensure staining quality.

The results were as follows: β-catenin (+), CD117 (-), DOG-1 (-), STAT6 (-), S100 (-), SOX10 (-), ALK (D5F3) (-), SMA (-), Desmin (-), CD34 (-), SDHB (+), FH (+) and Ki67 (LI:1%). Light microscopy demonstrated the following (Fig. 4): Tumor tissue was composed of cells with relatively uniform morphology and a mild appearance, primarily in the form of spindle- or star-shaped cells, arranged in a loose bundle-like pattern. Collagen fibers were scattered throughout. The tumor boundary was unclear and often invaded the adjacent adipose tissue. Furthermore, the positive expression of

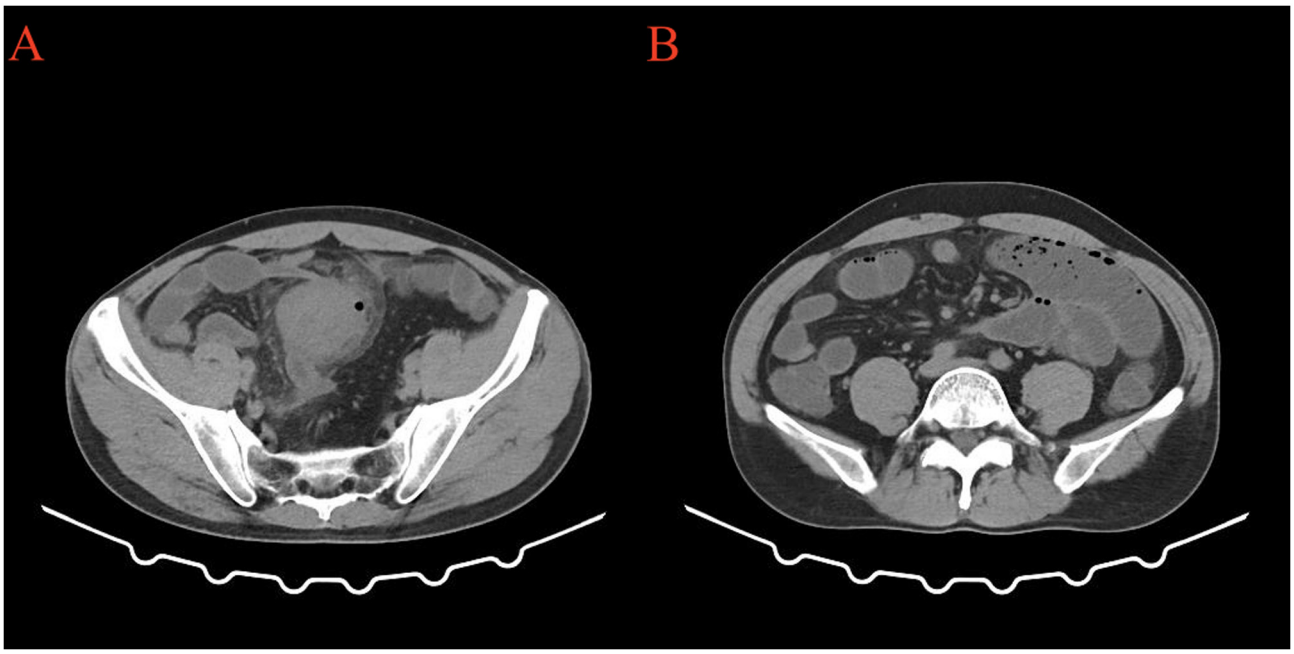

Figure 1. Initial abdominal CT findings. Abdominal CT scan showing (A) soft tissue mass in the lower abdomen accompanied by (B) small intestinal obstruction (obtained in August 2025).

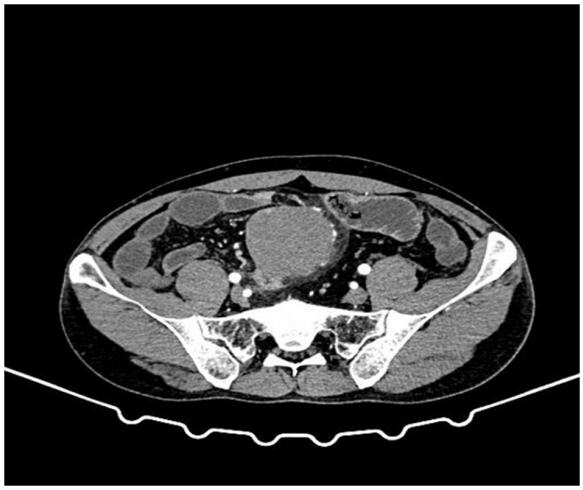

Figure 2. CT scan showing a neoplastic lesion measuring 49x56x63 mm in the lower abdomen (the midline area of the pelvic cavity, along with incomplete small bowel obstruction) (obtained in October 2025).

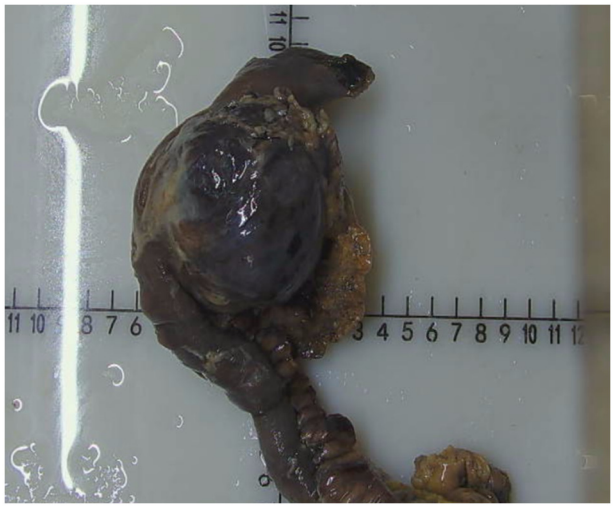

Figure 3. Gross appearance. Protuberant mass observed on the serosal side of the intestinal wall (obtained in November 2025).

β-catenin is used as a specific immunohistochemical marker for diagnosing AF, the expression of this protein has a high sensitivity in the diagnosis of AF and nuclear expression is an important indicator for diagnosing this disease (7). The remaining immunohistochemical indicators are based on the requirements of differential diagnosis (Fig. 5): STAT6 negativity ruled out solitary fibrous tumors. CD117 and DOG-1 negativity ruled out GIST. ALK (D5F3) negativity ruled out inflammatory myofibroblastic tumors. In addition, S100 and SOX10 negativity ruled out neurogenic tumors, such as schwannoma and neurofibroma, and negative results for SMA, Desmin and CD34 ruled out other spindle cell tumors. Positive SDHB indicated a tumor related to non-SDH deficiency, FH positivity supported the diagnosis of benign proliferative process and low expression of Ki67 suggested a lower tumor proliferation activity. The aforementioned systematic immunophenotype analysis provided a sufficient basis for the diagnosis of AF. Postoperative regular follow-up recommendations were given, with the specific follow-up plan advising that in the first year after the surgery, abdominal CT or MRI should be rechecked every 3 months; if the condition remained stable, the frequency could be extended to once every 6-12 months starting from the second year. The patient was instructed to pay attention to changes in abdominal symptoms and to seek medical attention promptly upon abdominal pain or recurrence of masses. During follow-up, the patient did not undergo CT or MRI examinations as initially recommended but received abdominal ultrasound examination. The most recent

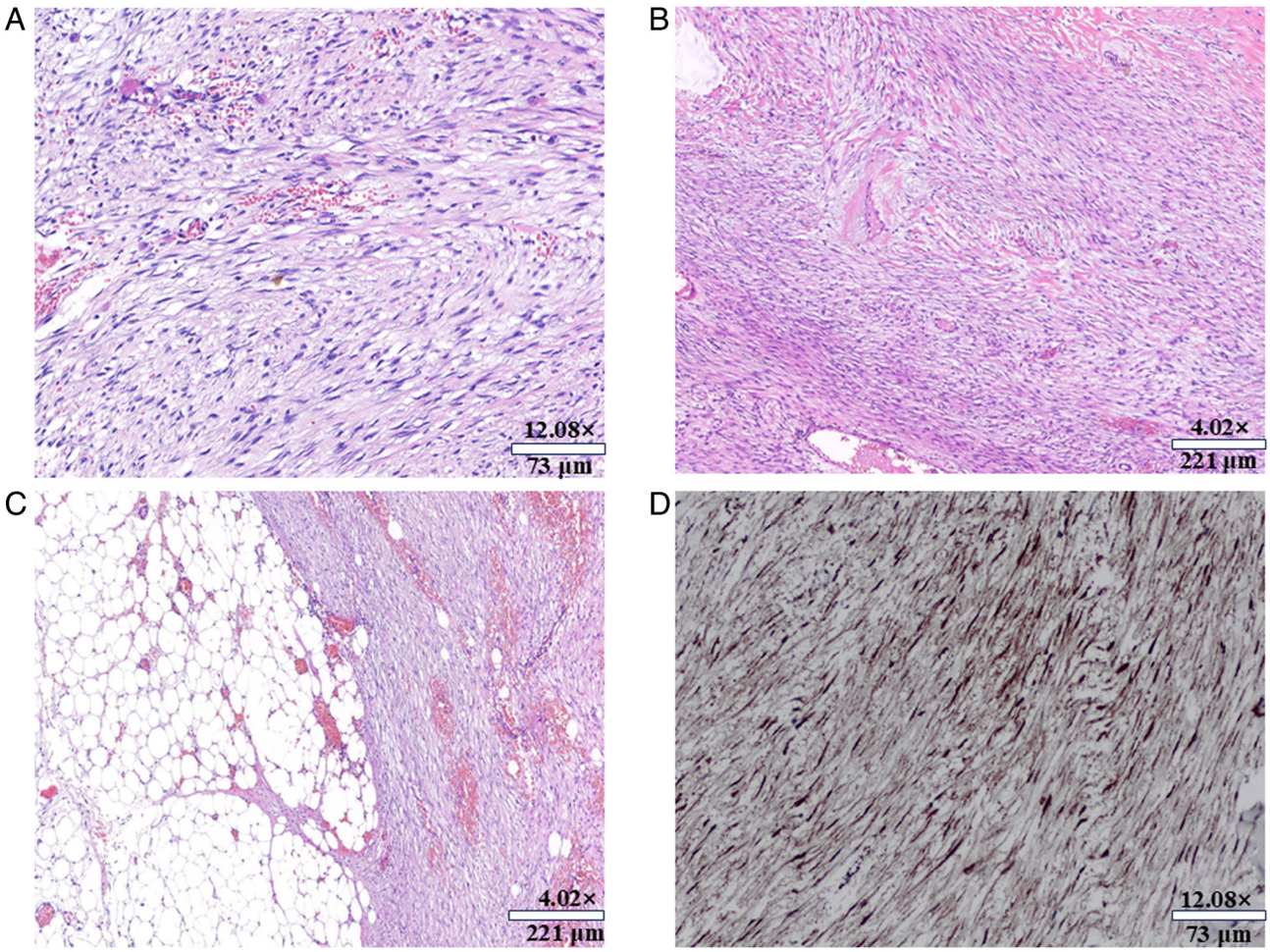

Figure 4. Pathology of aggressive fibromatosis. (A) Fibroblasts and myofibroblasts were arranged in bundles (magnification, x100; scale bar, 73 μm). (B) Scattered collagen fiber components in tumor tissue; and (C) tumor tissue invaded the surrounding adipose tissue (H&E staining; magnification, x40; scale bar, 221 μm). (D) Immunohistochemistry showed that the specific marker β-catenin was expressed in cell nuclei in tumor tissue (magnification, x100; scale bar, 73 μm) (all of the above-mentioned images were obtained in November 2025).

ultrasound (Fig. 6), obtained in February 2026, showed no evidence of mass or lymph node enlargement in the abdominal cavity or retroperitoneum. No intestinal dilation or abnormal fluid collections were observed. Color Doppler flow imaging revealed no abnormal blood flow signals. Postoperative imaging follow-up was performed with ultrasound instead of CT or MRI due to the patient's preference and economic considerations, as the patient remained asymptomatic and no signs of recurrence were detected. This approach is consistent with the principle of individualized follow-up, balancing effective surveillance with patient convenience and cost. Regarding postoperative pharmacotherapy, the patient did not receive any adjuvant chemotherapy, radiotherapy or targeted therapy following surgery, as complete resection with negative margins was achieved and the patient recovered uneventfully.

Discussion

National Comprehensive Cancer Network Clinical Practice Guidelines (version 2022) (8) classify AF into the following subtypes: Abdominal wall, retroperitoneal and abdominopelvic, extremity/truncal (including chest wall) and head/neck/intra-thoracic. The present patient was a 45-year-old male admitted due to incomplete small intestine obstruction. Imaging studies indicated an abdominal mass lesion and the clinical diagnosis was a common GIST. However, the present case was ultimately determined to be AF through postoperative pathology. This process indicated that AF occurring in the abdominal cavity has no specific clinical manifestations in the early stages of the disease. AF often presents as abdominal discomfort, painless masses or is discovered due to obstructive symptoms and is easily misdiagnosed as GIST, solitary fibrous tumor or idiopathic retroperitoneal fibrosis (9). Previous literature has reported that although imaging examinations can clearly depict the relationship between the lesion and surrounding structures, their resolution for soft tissue is relatively low. In preoperative imaging, the proportion of cases in which AF was misdiagnosed as a GIST reached 56.6% and subsequent diagnosis relies on pathological diagnosis (10,11). In the present pathological examination, under a light microscope, the tumor tissue was composed of cells with relatively uniform morphology and a mild appearance, mainly in the form of spindle-shaped or star-shaped cells, arranged in a loose bundle-like pattern. Collagen fibers were scattered throughout. The tumor boundary was unclear and often invaded the adjacent adipose tissue. The immunohistochemical detection strategy

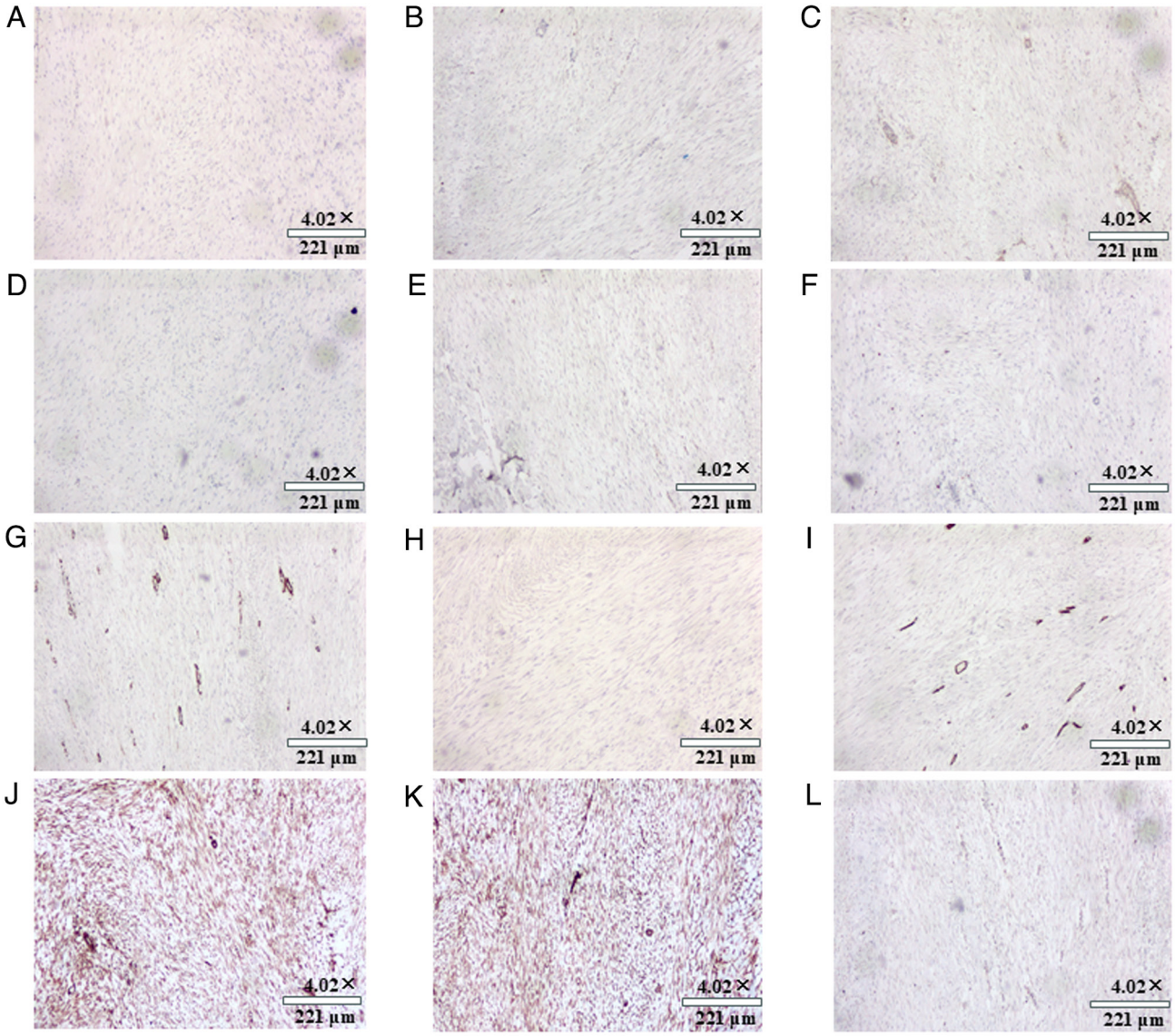

Figure 5. Immunohistochemical indicators based on the requirements of differential diagnosis: (A) Signal transducer and activator of transcription 6 (-); (B) c-KIT (CD117) (-); (C) discovered on GIST-1 (-); (D) anaplastic lymphoma kinase (D5F3) (-); (E) S100 (-); (F) SRY-box transcription factor 10 (-); (G) smooth muscle actin (-); (H) Desmin (-); (I) CD34 (-); (J) succinate dehydrogenase complex subunit B (+); and (K) fumarate hydratase (+). (L) Ki67 protein was expressed at low levels in tumor tissue (magnification, x40; scale bar, 221 μm) (all of the above-mentioned images were obtained in November 2025).

was based on the needs of differential diagnosis, namely the specific immunohistochemical indicator β-catenin (positive nuclear staining). The expression of this protein exhibits a high sensitivity in the diagnosis of AF and nuclear expression is an important indicator for diagnosing this disease (6). STAT6 negativity ruled out solitary fibrous tumors, CD117 and DOG-1 negativity ruled out GIST and ALK (D5F3) negativity ruled out inflammatory myofibroblastic tumors. Furthermore, both S100 and SOX10 negativity ruled out neurogenic tumors, such as schwannomas and neurofibromas, negative results for SMA, desmin and CD34, further ruled out other spindle cell tumors, positive SDHB indicated a tumor associated with non-succinate dehydrogenase deficiency and FH positivity supported diagnosis of benign proliferative process. Lastly, low expression of Ki67 suggested a lower tumor cell proliferation activity. This systematic immunophenotype analysis provided a sufficient basis for the diagnosis AF in the present case.

A number of previous case reports have described fibromatosis presenting with intestinal obstruction. For example, a case of small bowel obstruction caused by fibromatosis was recently reported, highlighting the difficulty of diagnosis and the importance of surgery (12,13). Similarly, two case reports have documented gastric AF. Wang *et al* (14) described a 47-year-old male who presented with abdominal pain and a palpable gastric mass; the patient underwent antrectomy, and the authors subsequently reviewed the literature on gastric involvement, emphasizing the need to differentiate gastric AF from gastrointestinal stromal tumors, schwannoma, leiomyoma and solitary fibrous tumors. More recently, Yang *et al* (15) reported on a 39-year-old female with hemorrhagic shock caused by a gastropancreatic region AF, who required emergency distal pancreatectomy with partial gastrectomy; this case further illustrates that gastric AF can present with life-threatening complications and that surgery remains a critical intervention in symptomatic cases. These reports collectively underscore

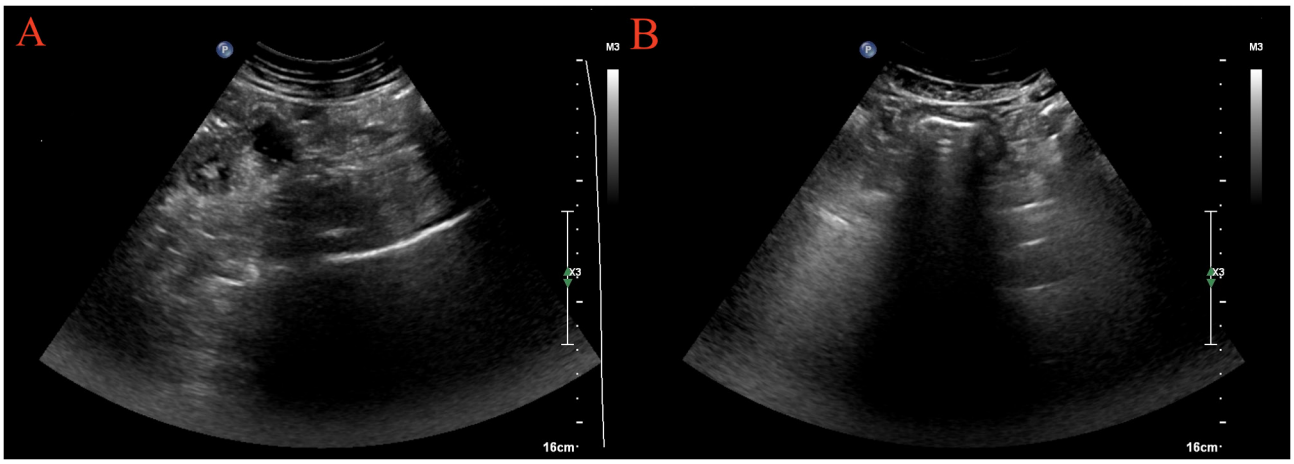

Figure 6. Postoperative follow-up ultrasound images. (A) Abdominal and (B) retroperitoneal ultrasound. No masses, lymphadenopathy, bowel dilatation or abnormal fluid collection were observed. Color Doppler showed no abnormal flow signals (obtained in February 2026).

that gastric AF, although rare, should be considered in the differential diagnosis of gastric masses, and that immunohistochemical evaluation (particularly β-catenin positivity) is essential for accurate diagnosis. Jambhekar *et al* (16) provided a comprehensive review of intestinal obstruction due to desmoid tumors, summarizing the clinical presentation, diagnosis and management options, highlighting that hard fibroma should be considered in the differential diagnosis of intestinal obstruction even in the absence of a history of familial adenomatous polyposis. Iordache *et al* (17) described a rare case of intestinal obstruction caused by endometriosis, highlighting the broad differential diagnosis of obstructive symptoms in female patients, with the key finding that endometriosis should be considered as a potential cause of bowel obstruction in women of reproductive age, even in the absence of typical gynecologic symptoms. By contrast, the present case involved a 45-year-old male with an intra-abdominal AF causing incomplete small bowel obstruction. The extensive immunohistochemical panel definitively excluded other spindle cell neoplasms (including GIST and solitary fibrous, neural and inflammatory myofibroblastic tumor), a level of diagnostic rigor not always detailed in prior case reports (18,19). Furthermore, the present case also allows for a discussion of key aspects in the evolving management landscape for AF, including active surveillance, systemic therapy (tyrosine kinase inhibitors and Wnt/β-catenin inhibitors) and the role of surgery in symptomatic cases. This holistic perspective aligns with recent consensus guidelines and may assist clinicians in individualizing treatment for patients presenting with similar symptoms (20).

At present, the specific causes and mechanisms of AF have not been fully elucidated, however associated factors may include genetics, trauma history and endocrine abnormality (21). With regard to genetic factors, familial adenomatous polyposis is an autosomal dominant genetic disorder and a disease representing one of the most clearly identified causes of AF (22). Studies have demonstrated that the Wnt/β-catenin pathway serves a key role in the pathogenesis and biology (23,24). AF exhibits characteristic mutations in CTNNB1, the gene encoding β-catenin, resulting in abnormal high expression of β-catenin. Highly expressed β-catenin levels in the cytoplasm serve a key role in the occurrence of invasive fibromatosis (25). Molecular genetics has shown that ~90% of sporadic cases are associated with mutations in the catenin β-1 gene on chromosome 3p21 (26). These mutations lead to abnormal expression of the β-catenin protein, which is associated with an increased risk of local tumor recurrence (3,27). With regard to physical factors, ~25% of patients with AF display a history of local surgery or trauma (28), with a possible mechanism being that surgery or trauma damages muscle fibers, causing local bleeding and hematoma, thereby providing favorable conditions for the occurrence and development of AF. With regard to endocrine factors, AF proliferates more rapidly during pregnancy. The pressure exerted on the abdominal wall during pregnancy and the increase in estrogen levels may be associated with the occurrence and development of the tumor. A number of patients exhibit a lower incidence rate after menopause, with spontaneous regression of AF after menopause also indicating this (29).

The management of intra-abdominal AF presents a clinical challenge. Owing to its low incidence and lack of reported cases, establishing a consensus on the optimal treatment strategy is difficult and published literature has yielded inconsistent conclusions (30). Surgical resection constitutes the most effective therapeutic intervention for this disease subtype (31). Relevant research has proposed that for abdominal, retroperitoneal and pelvic AF, systemic treatment should be the first choice (32). In addition, it has been shown that ~20% of AF cases disappear on their own (33,34). Therefore, surgery remains only one of the treatment methods suitable for AF (35,36). Recent large-sample studies have indicated that, in addition to surgical resection, for asymptomatic or stable patients, active monitoring is now widely accepted as the preferred initial strategy (37). Due to the rapid growth rate and large size of the tumor, as well as the presence of compression symptoms (such as partial small intestine obstruction), early surgery may effectively alleviate symptoms (38). Despite this, the recurrence rate of this disease is relatively high (the negative margin in the present case suggests an improved prognosis), with recent studies reporting postoperative recurrence rates ranging from 29.7 to 50% and long-term follow-up is still necessary (39). Clinically, if there is a positive margin or tumor residue is visible after surgery, postoperative radiotherapy should be administered to reduce the local recurrence rate (40).

Surgical intervention, while necessary in the present case, carries inherent risks. Surgical site infection (SSI) is the most common complication following colorectal and small intestine surgery, causing marked patient distress (41). SSI is associated with negative economic impact, increased morbidity, extended hospital stay, readmission and potentially life-threatening sepsis. A previous study reported a postoperative sepsis rate of 12.77% following colorectal procedures, with anastomotic leakage being the most frequent cause. Age >65 years, an American Society of Anesthesiologists score >2 and comorbidities such as diabetes are notable risk factors for sepsis (42,43). Given the clinical notability of SSI, identifying early predictive biomarkers is of interest. Recent research has explored the role of butyrylcholinesterase (BChE), a non-specific enzyme, as a potential marker for postoperative complications (44). A prospective study on patients undergoing colorectal surgery found that low BChE levels on the first and third postoperative days are independently associated with a significantly higher risk of developing SSI (odds ratio: ~2.5), even after adjusting for other risk factors, including age, sex, body mass index, diabetes mellitus, smoking status, American Society of Anesthesiologists score and operative time (45). Although the present patient recovered uneventfully, findings highlight the importance of perioperative care and suggest that markers including BChE may aid in the early identification of patients at high risk for complications, especially in obstructed cases where bowel preparation may be suboptimal (46). Overall, the majority of scholars suggest that for patients with AF, it is best to adopt a follow-up observation strategy first (47). Following thorough assessment of the condition, a treatment plan should be formulated. It is recommended to start with treatment methods that have fewer adverse reactions and sequelae, such as active surveillance for asymptomatic patients, low-dose chemotherapy (methotrexate combined with vinblastine or vinorelbine) or tyrosine kinase inhibitors (e.g., sorafenib, imatinib), and to implement individualized treatment (48). AF targeted therapy drugs primarily include tyrosine kinase inhibitors (imatinib, nilotinib, sorafenib, sunitinib, pazopanib and anlotinib), Wnt/β-catenin inhibitors (tacigivir) and γ-secretase inhibitors (PF-03084014) (49). The latter two are novel targeted drugs that are entering the phase I clinical trial stage (50). Although AF does not exhibit metastatic potential, cytotoxic chemotherapy drugs serve as an effective treatment for AF (51). In addition, reports have suggested a low-dose combination of methotrexate and vincristine for chemotherapy or neoadjuvant chemotherapy (52,53).

In conclusion, the diagnosis of AF primarily relies on postoperative pathological examination. Preoperative diagnosis is based on the clinical manifestations of the patient and the results of MRI and CT examinations. Ultrasound may also be used for follow-up monitoring. When diagnosing or suspecting AF, it is important to assess the quality of life of the patient and formulate an individualized treatment plan based on the specific circumstances of the patient (54,55). The treatment experience of the present patient suggests that for abdominal space-occupying lesions presenting as intestinal obstruction, in addition to considering common tumors (such as GIST) in clinical and imaging evaluations, AF should be included in the differential diagnosis. Final diagnosis depends on postoperative pathology and systematic immunohistochemical analysis. The present case adds to the limited literature on AF presenting with intestinal obstruction and underscores the importance of a comprehensive immunohistochemical panel to achieve a definitive diagnosis.

Acknowledgements

Not applicable.

Funding

No funding was received.

Availability of data and materials

The data generated in the present study may be requested from the corresponding author.

Authors' contributions

XZ and YW conceptualized the study. XZ, YW and RF made substantial contributions to the acquisition, analysis and interpretation of patient data. CC and WL made substantial contributions to the analysis and interpretation of data, specifically performing the pathological and immunohistochemical evaluation that was central to the definitive diagnosis. XZ drafted the initial manuscript. YW, CC and WL critically revised the manuscript for important intellectual content. All authors gave final approval of the version to be published and agree to be accountable for all aspects of the work, ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. XZ and YW confirm the authenticity of all the raw data. All authors have read and approved the final manuscript.

Ethics approval and consent to participate

All procedures were conducted in accordance with the ethical standards of the Ethics Committee of The First People's Hospital of Xiantao and with the Helsinki Declaration of 1975, as revised in 2008. Approval from the Ethics Committee of The First People's Hospital of Xiantao (Xiantao, China; approval no. 2025-LL-KY-041) was received. Informed consent to participate was obtained from the patient in written form and all patient data were anonymized prior to analysis.

Patient consent for publication

Written informed consent was obtained from the patient for the case information and images to be published in the present case report.

Competing interests

The authors declare that they have no competing interests.

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