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Case Report

Symptomatic uterine leiomyoma mimicking a myeloproliferative neoplasm with suspected red degeneration and secondary thrombocytosis post-caesarean section: a case report

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ABSTRACT

Uterine leiomyomas are common benign tumours and may undergo red degeneration when their blood supply is compromised. Postpartum red degeneration is uncommon and can present with clinical and laboratory features that resemble infection or haematological disease. We describe a 35-year-old para 1 woman who presented four months after Caesarean section with lower abdominal pain, fever, night sweats, weight loss and generalised malaise. She had known large uterine leiomyomas. Blood tests showed microcytic anemia, raised inflammatory markers, a C-reactive protein concentration of 299 mg/l and marked thrombocytosis, with a peak platelet count of $1380 \times 10^9/l$. Pelvic magnetic resonance imaging demonstrated a large posterior uterine leiomyoma with features suggestive of acute red degeneration. Diffuse low T1 signal in the visualised pelvic bone marrow raised the possibility of an underlying marrow disorder. Following haematology, radiology and gynaecology review, the differential diagnosis included a severe reactive inflammatory response due to fibroid degeneration and a myeloproliferative neoplasm. The patient underwent laparotomy and myomectomy. Histopathological examination confirmed a benign leiomyoma with extensive red degeneration, infarction and acute-on-chronic inflammation. Her symptoms and inflammatory markers improved after surgery. This case illustrates that red degeneration of a postpartum leiomyoma may produce marked reactive haematological abnormalities and mimic a myeloproliferative disorder. Correlation of the clinical course with imaging, haematological assessment and histopathology was essential in establishing the diagnosis.

Keywords: Uterine leiomyoma, Red degeneration, Reactive thrombocytosis, Myeloproliferative neoplasm, Postpartum fibroid complications, Case report

INTRODUCTION

Uterine leiomyomas are the most common benign tumours of the female reproductive tract. Their cumulative incidence by 50 years of age is approximately 70% in White women and more than 80% in Black women, although many remain asymptomatic.^{1,2} Symptomatic leiomyomas may cause heavy menstrual bleeding,

anaemia, pelvic pain or pressure, and reproductive complications.²

Degenerative change may occur when a leiomyoma outgrows or loses part of its vascular supply. Red, or haemorrhagic, degeneration is a form of haemorrhagic infarction that is most often associated with pregnancy and is less frequently reported in the postpartum period.^{3,4} Magnetic resonance imaging (MRI) can demonstrate

characteristic changes related to haemorrhage and thrombosed peripheral vessels, including T1 hyperintensity and a low-signal peripheral rim.³

Thrombocytosis is commonly secondary to inflammation, infection, blood loss or tissue injury. 5 However, a very high platelet count accompanied by weight loss, fever or night sweats may also prompt investigation for a clonal myeloproliferative neoplasm. This case describes a postpartum patient with a degenerating leiomyoma who developed an inflammatory response, thrombocytosis and abnormal pelvic marrow signal on MRI, creating a diagnostic concern for an underlying haematological disorder.

CASE REPORT

Clinical history and presentation

A 35 year old para 1 woman was referred to the emergency gynaecology service with a two-week history of progressively worsening, intermittent sharp lower abdominal pain. The pain was associated with fever, headache, generalized joint aches, night sweats and weight loss. Four months earlier, in February 2026, she had undergone an emergency Caesarean section for failure to progress in labour. She was exclusively breastfeeding, was not using hormonal contraception and reported her last menstrual period in April 2026. She described persistently feeling unwell since delivery.

She was known to have multiple large uterine leiomyomas on previous pelvic imaging:

Anterior sub serous fibroid measuring 80×50×75 mm (Mean 68.3 mm, Volume 157.1cm³) with central cystic degeneration.

Anterior sub serous fibroid measuring 35×21×32 mm (Mean 29.3 mm, Volume 12.3 cm³).

Left lateral wall sub serous fibroid measuring 71×99×113 mm (Mean 94.3 mm, Volume: 415.9 cm³).

Physical examination

On examination, her temperature ranged from 37.1°C to 38.5°C and her pulse was 109 beats/min. Blood pressure was 110/62 mmHg and oxygen saturation was 98% on room air. The abdomen was distended and there was tenderness on palpation. The uterus was palpable with a prominent tender fundal mass extending to approximately 18 weeks' gestation.

Vaginal examination showed no active bleeding or abnormal discharge. The cervical os was closed and difficult to visualise, and bimanual examination elicited marked pelvic tenderness.

Laboratory and hematological evaluation

Initial investigations demonstrated a marked inflammatory response, microcytic anemia, raised neutrophilic count and severe thrombocytosis (Table 1). C-reactive protein (CRP) was 186 mg/l initially and reached 299 mg/l, subsequently falling to 97 mg/l. The white cell count reached 31.10×10⁹/l, with a peak neutrophil count of 27.37×10⁹/l. The platelet count was 917×10⁹/l at presentation and subsequently increased to a maximum recorded value of 1380×10⁹/l. Haemoglobin ranged from 81 to 89 g/l with microcytic indices (MCV 81.8-86.4 fl). Two units of packed red blood cells were transfused. Liver enzymes were mildly elevated. Serum lactate remained below 1.0 mmol/l.

Table 1: Serial laboratory investigations during admission.

Parameter	Day 1 (Admission)	Day 2	Day 3	Day 5	Reference Range
Haemoglobin (g/l)	89	81*	84	84	115-165
White Cell Count (x10 ⁹ /l)	25.38	31.10	21.53	17.11	4.0-11.0
Platelet Count (x10 ⁹ /l)	917	1128	990	1273 (Peak 1380)	150-400
Neutrophil Count (x10 ⁹ /l)	23.40	27.37	17.53	12.88	2.0-7.5
C-Reactive Protein (mg/l)	299	246	165	97	<5.0

*Post-transfusion value following 2 units PRBC.

Diagnostic imaging

Contrast-enhanced CT of the abdomen and pelvis demonstrated multiple intramural and subserosal uterine leiomyomas without a significant interval increase in size. No intra-abdominal or pelvic collection, abscess, bowel obstruction or focal bony destruction was identified. The spleen looked normal.

Pelvic MRI demonstrated a posterior uterine wall mass measuring 8.0×8.6×8.2 cm. The lesion showed slight T1 hyperintensity, low T2 signal, surrounding oedema and a dark peripheral rim on diffusion-weighted imaging. In the clinical context, these appearances were considered suggestive of acute red (haemorrhagic) degeneration. A second subserosal leiomyoma measuring 4.8×3.0 cm contained central T2 hyperintensity, in keeping with cystic degeneration.

The visualised pelvic bone marrow was diffusely low in signal on T1-weighted sequences. The radiology report recommended correlation with haematological investigations because marrow infiltration or a myeloproliferative process could not be excluded on imaging alone.

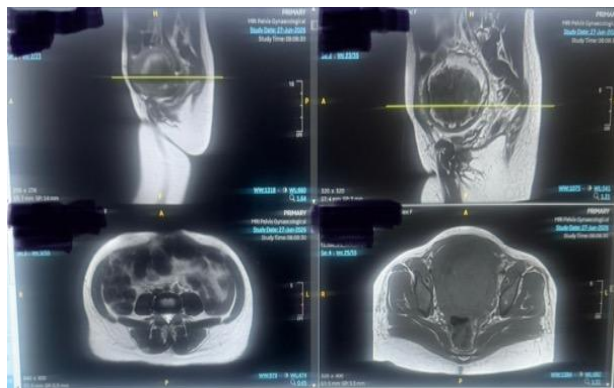


Figure 1: Pelvic MRI demonstrating the large uterine leiomyoma with imaging features of acute red (haemorrhagic) degeneration.

Multidisciplinary Management and Surgical Intervention

Because of the combination of fever, night sweats, weight loss, marked leukocytosis, a platelet count above $1300 \times 10^9/l$ and abnormal marrow signal on MRI, urgent haematology advice was obtained. The principal differential diagnoses were severe reactive thrombocytosis related to leiomyoma infarction and inflammation, and a primary haematological disorder such as essential thrombocythaemia or another myeloproliferative neoplasm. Haemophagocytic lymphohistiocytosis was also considered.

The calculated H-score suggested a less than 1% probability of haemophagocytic lymphohistiocytosis. The absence of splenomegaly on CT was reassuring but did not, by itself, exclude a myeloproliferative disorder. Molecular testing for JAK2 V617F and CALR mutations was therefore requested as an outpatient investigation. Assessment of iron status was deferred because recent transfusion and the acute inflammatory response could affect interpretation of iron studies.

Following multidisciplinary discussion, surgical management was agreed and the patient underwent laparotomy and Total abdominal Hysterectomy.

At surgery, the uterus was enlarged and the leiomyoma contained markedly degenerated, necrotic and haemorrhagic tissue with prominent vascularity. The removal of the degenerated fibroid was completed without an intraoperative complication.

Histopathological examination showed a benign uterine leiomyoma with extensive acute red degeneration, tissue infarction and an acute-on-chronic inflammatory response. No malignant features were identified.



Figure 2: Intraoperative appearance of the excised necrotic and haemorrhagic degenerated leiomyoma.



Figure 3 (a and b): Resected leiomyoma showing extensive areas of degeneration and necrosis.

Postoperative course

Following surgery, the patient's abdominal pain, fever and night sweats resolved and she reported a clear improvement in her general wellbeing. The inflammatory markers and blood counts also improved. The close temporal relationship between removal of the degenerated leiomyoma and clinical improvement supported a reactive inflammatory process as the main explanation for the haematological abnormalities, while the planned haematology investigations provided appropriate assessment for a possible underlying clonal disorder.

DISCUSSION

Red degeneration is a form of haemorrhagic infarction within a uterine leiomyoma and is thought to result from disruption of its vascular supply. It is well recognised during pregnancy but is less commonly described after delivery. The MRI appearances in this patient, including mild T1 hyperintensity, low T2 signal and a peripheral low-signal rim, were compatible with previously described features of red degeneration.³ Rao et al. also reported postpartum red degeneration as a diagnostic challenge, emphasising that the clinical and radiological presentation may overlap with other causes of acute pelvic pain and systemic illness.⁴

The degree of thrombocytosis was a particularly unusual feature of this case. The platelet count rose from $917 \times 10^9/l$ to $1380 \times 10^9/l$ in association with neutrophilic leukocytosis and a markedly elevated CRP. Such findings required exclusion of a myeloproliferative neoplasm, particularly because the patient also had constitutional symptoms. Nevertheless, reactive thrombocytosis is a recognised response to inflammation and tissue injury.⁵ Interleukin-6 has been shown to stimulate thrombopoietin production and contribute to inflammatory thrombocytosis.⁶ In this patient, extensive leiomyoma infarction and the acute-on-chronic inflammatory changes demonstrated on histology provide a biologically plausible source for the marked reactive platelet response. The subsequent improvement after myomectomy further supported this interpretation, although haematological follow-up remained appropriate.

The diffuse low T1 marrow signal on pelvic MRI created an additional diagnostic concern. Bone marrow reconversion may occur when haematopoietic demand is increased, including in anaemia and other states of physiological stress, and its MRI appearance can overlap with marrow infiltration.⁷ The patient's anaemia and substantial systemic inflammatory response therefore offered a possible reactive explanation for the marrow appearances. However, MRI alone could not reliably distinguish reconversion from an infiltrative process, which justified formal haematology review and molecular testing.

Fever, night sweats and weight loss also contributed to the initial concern for haematological malignancy. In this case, these symptoms occurred alongside a large painful leiomyoma with imaging evidence of degeneration and subsequently resolved after surgical removal. This clinical course favoured an inflammatory response to tissue necrosis. Previous postpartum reports have described degenerating leiomyomas presenting with abdominal pain, fever and diagnostic uncertainty, with MRI assisting diagnosis and management.^{4,8}

Taken together, the findings show the importance of interpreting extreme thrombocytosis in its full clinical context. The platelet count and marrow MRI appearances could not initially be assumed to be reactive, and investigation for a primary haematological disorder was necessary. At the same time, the radiological evidence of leiomyoma degeneration, operative findings, benign histopathology and postoperative improvement provided converging evidence for a severe inflammatory response to the degenerated fibroid. Close collaboration between gynaecology, radiology and haematology allowed both possibilities to be considered while definitive treatment of the symptomatic leiomyoma proceeded.

CONCLUSION

Red degeneration of a uterine leiomyoma should be considered in postpartum patients with known fibroids who develop pelvic pain and an otherwise unexplained systemic inflammatory response. In this case, extreme thrombocytosis, constitutional symptoms and diffuse low T1 marrow signal initially raised concern for a myeloproliferative disorder. Histopathology confirmed extensive red degeneration and infarction, and the patient's clinical and laboratory abnormalities improved after myomectomy. The case highlights the need to investigate serious haematological differentials while also recognising that extensive tissue necrosis and inflammation can produce striking reactive blood-count abnormalities.

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Ethical approval: Not required

REFERENCES

1. Baird DD, Dunson DB, Hill MC, Cousins D, Schectman JM. High cumulative incidence of uterine leiomyoma in Black and White women: ultrasound evidence. *Am J Obstet Gynecol.* 2003;188(1):100-7.
2. Bulun SE. Uterine fibroids. *N Engl J Med.* 2013;369(14):1344-55.
3. Takeuchi M, Matsuzaki K, Bando Y, Harada M. Evaluation of red degeneration of uterine leiomyoma with susceptibility-weighted MR imaging. *Magn Reson Med Sci.* 2019;18(2):158-62. doi:10.2463/mrms.mp.2018-0074.
4. Rao S, Jha A, Panthi B, Khatiwada A. Postpartum red degeneration of uterine leiomyoma: a diagnostic

- dilemma: a case report. *Radiol Case Rep.* 2025;20(10):5165-71.
5. Bleeker JS, Hogan WJ. Thrombocytosis: diagnostic evaluation, thrombotic risk stratification, and risk-based management strategies. *Thrombosis.* 2011;2011:536062.
 6. Kaser A, Brandacher G, Steurer W, Kaser S, Offner FA, Zoller H, et al. Interleukin-6 stimulates thrombopoiesis through thrombopoietin: role in inflammatory thrombocytosis. *Blood.* 2001;98(9):2720-5.
 7. Vilanova C, Martín-Noguerol T, García-Figueiras R, Baleato-González S, Vilanova JC. Bone marrow magnetic resonance imaging (MRI): morphological and functional features from reversion to infiltration. *Quant Imaging Med Surg.* 2024;14(11).
 8. Torrance SM, Munn N, Ellis S, Rebello R, Ramanna R. Role of dynamic MRI in surgical decision-making for a postpartum woman with a prolapsed degenerating uterine leiomyoma. *J Obstet Gynaecol Can.* 2009;31(5):446-51.

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