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Giant Uterine Leiomyoma Associated with Erythrocytosis: First Reported Case in Peru

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Uterine Myomatosis; Polycythemia; Erythrocytosis; Leiomyoma; Rare Case

1. Abstract

1.1. Introduction

Myomatous-erythrocytic syndrome is an exceptionally rare clinical entity characterized by the coexistence of giant uterine leiomyomas defined as fibroids measuring ≥20 cm—and erythrocytosis, marked by an abnormal elevation in red blood cell mass, hemoglobin, and hematocrit.

1.2. Case Presentation

We describe the case of a 43-year-old woman admitted to the emergency department with a giant abdominal mass and laboratory evidence of severe erythrocytosis (hemoglobin: 22 g/dL). Surgical exploration revealed a 20 cm anterior uterine wall tumor. Histopathological analysis confirmed the diagnosis of a giant uterine leiomyoma. Post-hysterectomy follow-up demonstrated a progressive normalization of hemoglobin levels.

1.3. Conclusion

To our knowledge, this represents the first documented case of myomatous-erythrocytic syndrome in Peru, reinforcing the importance of considering this rare association in the differential diagnosis of patients with giant myomas and unexplained erythrocytosis.

2. Introduction

Uterine leiomyomas, also known as fibroids, are benign solid tumors composed of smooth muscle fibers and fibroblasts [1], representing the most frequent symptomatic solid neoplasms in women of reproductive age. Their peak incidence occurs between 35 and 54 years of age [2]. Clinical manifestations may include metrorrhagia, hypermenorrhea, and pelvic pain of a compressive nature; nonetheless, up to 33% of cases remain asymptomatic [3]. Reported risk factors include early menarche and the use of oral contraceptives before the age of 16 [4]. Erythrocytosis, or polycythemia, is defined as an abnormal elevation in red blood cell mass, hemoglobin concentration, and hematocrit, typically exceeding 25% above reference values [5,6]. It is categorized as primary, associated with low erythropoietin levels, or secondary, with elevated erythropoietin concentrations [5]. Both types may have congenital or acquired etiologies. Giant myomatosis is defined as a uterine fibroid measuring ≥20 cm in diameter [7]. The association between giant uterine myomas and erythrocytosis, known as myomatous-erythrocytic syndrome, was first described by Thompson and Marson in 1953 [8]. Since then, only a limited number of cases have been reported worldwide, and none previously documented in Peru.

3. Case Report

With informed consent obtained, we present the case of a 43-year-old woman from the highland region of Peru who presented to the emergency department with a rapidly enlarging abdominal mass of approximately six months' duration, accompanied by menorrhagia and hypermenorrhea. Physical examination revealed a firm, immobile, non-tender abdominal mass measuring approximately 20 × 20 cm, occupying the entire abdominal cavity. Abdominal ultrasonography demonstrated a solid, homogeneous, well-defined mass of similar dimensions, obscuring the uterus, adnexa, and adjacent pelvic structures—findings suggestive of a giant uterine fibroid. Initial laboratory evaluation showed marked erythrocytosis, with a hemoglobin concentration of 22.4 g/dL and hematocrit of 66.7%. Serum CA-125 was within normal limits (9 U/mL). Abdominopelvic computed tomography confirmed the presence of a large, well-circumscribed, solid mass measuring 225 × 234 mm (Figure 1). Following multidisciplinary evaluation with anesthesiology and hematology teams, an elective exploratory laparotomy was scheduled. Intraoperatively, a giant mass measuring 20 × 23 cm was identified, originating from the uterus, with smooth borders and occupying the abdominal cavity without

adhesions to adjacent structures (Figure 2). A total abdominal hysterectomy was performed, and the specimen was submitted for histopathological analysis, which confirmed the diagnosis of giant uterine leiomyoma. The patient's postoperative course was uneventful, and she was discharged on the third postoperative day. Follow-up revealed a progressive decline in hemoglobin levels, normalizing to 13 g/dL with hematocrit at 39%. The patient remained asymptomatic and demonstrated favourable long-term recovery.

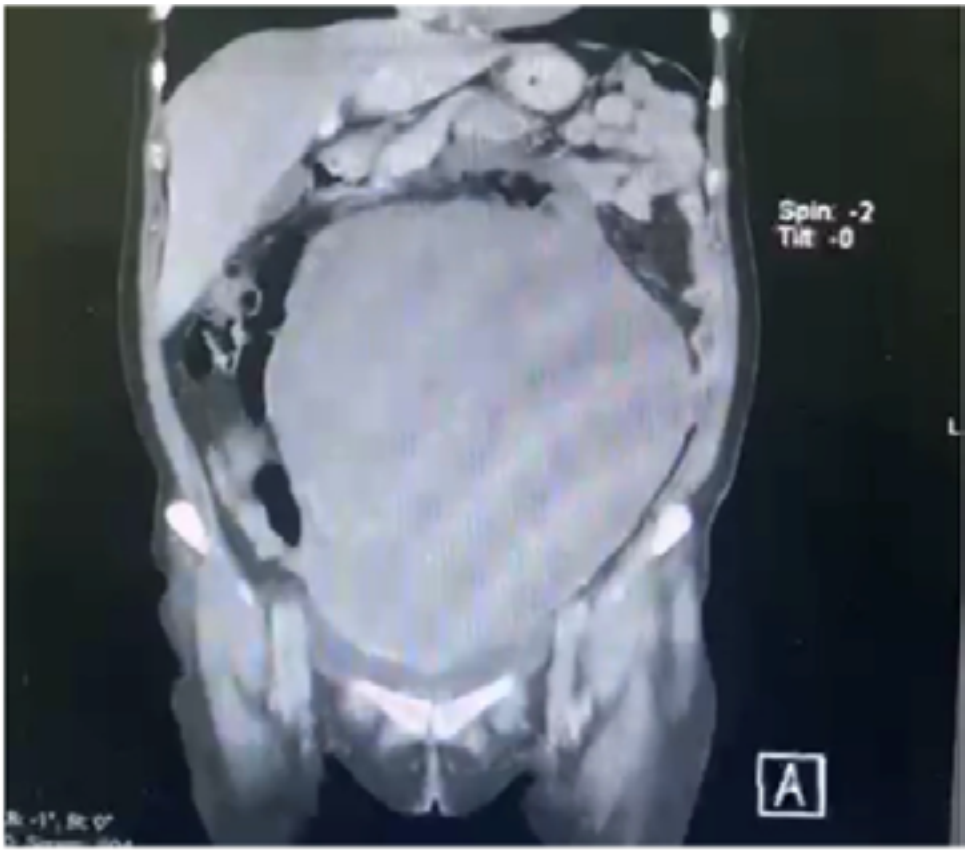

Figure 1: Coronal section of a multi-slice computed tomography scan showing a giant pelvic-abdominal mass.

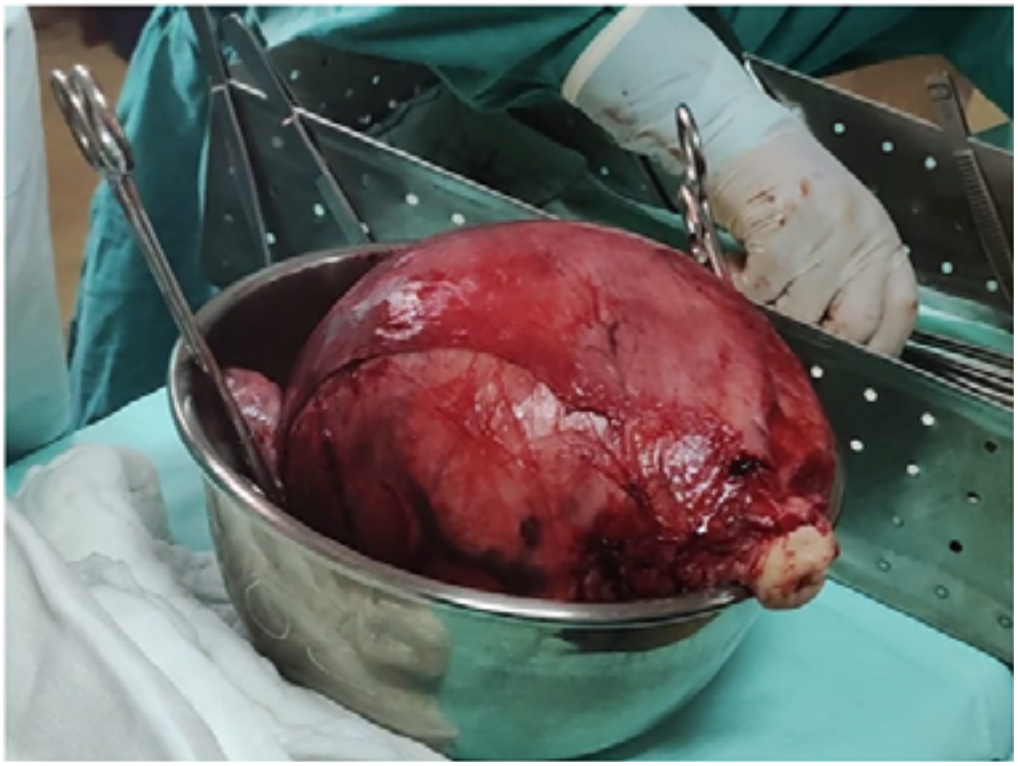

Figure 2: Intraoperative image of the surgical specimen prior to pathological examination.

4. Conclusions

Uterine leiomyomas are the most common benign tumors of the female reproductive tract, with a prevalence of 70–80% in women [4]. Although frequently asymptomatic, their clinical presentation depends on size, number, and location. Large myomas may cause abnormal uterine bleeding, pelvic pressure, urinary and bowel symptoms, infertility, and recurrent pregnancy loss. The coexistence of uterine myomatosis and erythrocytosis is rare, and its pathophysiology remains unclear. The leading hypothesis suggests that the tumor secretes erythropoietin or induces hypoxia-related mechanisms that stimulate erythropoiesis. Notably, normalization of hemoglobin levels after surgical removal strongly supports a causal relationship between the fibroid and the erythrocytosis. Our case aligns with previous literature in demonstrating complete hematologic resolution post-myomectomy or hysterectomy, underscoring the importance of considering myomatous-erythrocytic syndrome in patients with unexplained erythrocytosis and large pelvic masses.

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