Case report

Retroperitoneal GIST: An exceptional location of a rare tumour. A case report from Ouagadougou and review of the literature

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ABSTRACT

Introduction: GIST can occur in all segments of the gastrointestinal tract with a predilection for the stomach. Retroperitoneal localization remains exceptional. We report a case to describe our diagnostic and therapeutic approach.

Case presentation: A 55-year-old patient was admitted with borborygms and a sensation of lumbar swelling for 6 months. He was diabetic and hypertensive. The clinical examination noted a right lumbar mass with perception of bowel sound anterior to the mass, with minimal discomfort and mobility. Ultrasound revealed a hyper-vascularised, encapsulated, well-limited retroperitoneal tissue mass in contact with the right psoas muscle. Abdomino-pelvic CT scan showed a large, hypervascularized, encapsulated, calcified tissue mass measuring 147 × 106 mm in close contact with the outer edge of the right psoas muscle, suspected of being malignant. MRI noted a suspicious process developed at the expense of the right psoas muscle in its lumbar and iliac portion suggestive of a psoas rhabdomyosarcoma. The patient underwent laparotomy with a retroperitoneal approach by lumbar incision. Histology and immunohistochemistry revealed a GIST expressing CD117. The patient was put on imatinib for 6 months. He is complaint-free after 4 months.

Discussion: Despite the rarity of retroperitoneal GIST, it should be considered in the presence of any retroperitoneal mass. This will allow for early management.

Conclusion: Retroperitoneum is an exceptional location for GIST. Surgery remains the mainstay of curative treatment. Adjuvant imatinib reduces the risk of recurrence. The prognosis is usually good.

1. Introduction

Gastrointestinal stromal tumours are rare, accounting for less than 1% of cancers [1]. They arise from spindle cells, often epithelioid, rarely mixed, called Cajal cells [2,3]. Their main location is in the digestive tract with a predilection for the stomach [1,4]. Retroperitoneal location is exceptional and is only reported in case reports [2,3]. Treatment is mainly surgical and consists of excision without rupture of the pseudo-capsule [5]. Adjuvant imatinib reduces the risk of recurrence [2,5]. The treatment of GIST is not codified because of its rarity, and is based on the treatment of both retroperitoneal sarcoma and digestive GIST [2,5]. We report a case to describe our diagnostic and therapeutic approach. This case has been reported in line with SCARE criteria [6].

2. Case presentation

A 55-year-old patient, Mossi ethnicity, was admitted to the oncology clinic with borborygms and a sensation of lumbar swelling for 6 months. His history included diabetes and arterial hypertension which were regularly monitored. We did not note any family history of GIST. The patient has no previous surgical history. Any allergies and/or adverse reactions weren’t identified. He is an electrical engineer, is married and comes from Ouagadougou. He is not a smoker and does not drink alcohol. His body mass index was 28.9 kg/m². The clinical examination...
noted a right lumbar mass with perception of bowel sound anterior to the mass, with minimal discomfort and mobility. Any concurrent treatments were notified. The rest of the examination was normal. Hemoglobin level was 11.8 g/dl. Ultrasound showed a hypervascularised, encapsulated, well-limited retroperitoneal tissue mass in contact with the right psoas muscle. Abdomino-pelvic CT scans showed a large, hypervascularised, encapsulated, calcified tissue mass measuring $147 \times 106 \times 13$ mm in intimate contact with the outer edge of the psoas muscle and suspicious of malignancy (Fig. 1). The procedure remained retroperitoneal without rupture of the peritoneum. After checking the haemostasis, we left a tube drain in place for three days. The patient received postoperative resuscitation including administration of analgesics and antibiotics to prevent complications. He was discharged on the third postoperative day. He was put on imatinib 400 mg per day for 12 months. Presently, 6 months later, he has no complaint and his CT scan does not show any stigma of recurrence.

3. Discussion

Until 33 years ago, the majority of mesenchymal tumours were considered to be smooth muscle tumours (leiomyomas, leiomyosarcomas, etc.) [7]. In 1983, Mazur and Clark introduced the term gastrointestinal stromal tumour (GIST) to describe a distinctive type of non-smooth muscle mesenchymal tumours overexpressing surface receptors c-KIT or CD117 and CD34 [1,4]. GISTs are rare tumours identified by advances in immunohistochemistry [4]. Prior to this era, they were considered leiomyosarcomas [7]. They occur preferentially in the gastrointestinal tract with a preference for the stomach (60%) [1,4]. They may present by pain and/or lumbar curvature [1,4]. CT scan is a key examination that shows a retroperitoneal mass pushing the intra-abdominal viscera forward, the large vessels laterally [1]. It is an organ-independent mass, arising from isolated Cajal’s cells in the retroperitoneum [2,3,8]. Abdominopelvic MRI provides valuable information by showing the absence of a fatty component, eliminating liposarcoma [2,5,8]. It also provides a better description of the relationship of the mass to adjacent structures [1,8]. The diagnosis is made either on biopsy specimens as in our case, or on the surgical specimen [1,7]. The vast majority (94.6%) overexpress CD34 or CD117 surface receptors [4,7]. Their grade of malignancy has been established by Fletcher who distinguishes between low, intermediate and high grades of malignancy [4,7]. All extragastric GISTs larger than 5 cm or of any size with more than 10 mitoses per 50 fields are considered Fletcher high grade [7]. In our case, the mass was larger than 10 cm. It was therefore at high risk of recurrence. Furthermore, the presence of tumour necrosis classifies the tumour as high grade malignant with a significantly higher
risk of recurrence compared to non-necrotic tumours [8,9]. The treatment of retroperitoneal GISTs is not clearly standardised because of their rarity [2,3]. It is based on the treatment of digestive GIST [5]. It consists of a monobloc resection of the tumour without rupturing the capsule [2,5]. Surgery can be performed via a conventional or laparoscopic approach [10]. Surgery is the main treatment and is combined with adjuvant imatinib for retroperitoneal GISTs overexpressing surface C-kit receptors and classified as high-grade by Fletcher (Şentürk, Krunal). For metastatic or non-resectable GIST, imatinib can be used as neoadjuvant or adjuvant therapy [11]. The daily dose varies between 400 and 800 mg [4,5]. It lasts between 6 and 18 months depending on the author [5]. In our case, surgery was the first treatment followed by imatinib for 12 months. The prognosis of GIST has generally been good since the advent of imatinib [2,5]. In our case, despite the size of the tumour, the patient had no complaint or signs of recurrence. Surgeons should keep in mind that despite the rarity of retroperitoneal GIST, it should be considered in the presence of any retroperitoneal mass. This will allow the diagnosis to be made preoperatively and neoadjuvant treatment with imatinib to reduce the size, facilitate surgery, reduce the risk of recurrence and improve the prognosis.

4. Conclusion

Retroperitoneum is a rare location for GIST. They can be distinguished from other mesenchymal masses by immunohistochemistry. Surgery is the main treatment. It consists of a monobloc excision without capsular rupture. Imatinib reduces the risk of recurrence in high-grade C-kit overexpressing tumours. The prognosis is generally good.

CRediT authorship contribution statement

ZONGO Nayi, OUEDRAOGO Nabonwindé Lamoussa Marie: Conceptualization, Methodology. Writing - Original Draft, Investigation ZONGO Nayi, OUEDRAOGO Nabonwindé Lamoussa Marie, KOAMA Adjirata: Formal analysis, acquisition of data, Statistical analysis and interpretation of data. OUATTARA Souleymane, WINDSOURI Mamadou, YAMEOGO, Paratyande Bonaventure: Visualization, Investigation ZONGO Nayi: Supervision.

Declaration of competing interest

The authors declare that they have no competing interests regarding the publication of this manuscript.

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Ethical approval

Ethical approval is not needed for this case report as patient consent and we are not trialing a new device.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Registration of research studies

N/a.

Guarantor

Nayi ZONGO.

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