Retroperitoneal lipoma; a benign condition with frightening presentation

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ABSTRACT: Lipoma is the most frequent soft tissue tumor in adults. Its occurrence in the retroperitoneal region is extremely rare. The aim of this study is to report a case of retroperitoneal lipoma with a literature review.

PRESENTATION OF CASE: A 34-year-old female presented with abdominal distension and severe back pain for one year duration. She also reported weight loss and constipation. The examination revealed asymmetrical abdominal distension and everted umbilicus. There was a big irregular mass occupying the whole abdomen reaching into the xiphisternum, firm in consistency, smooth surface, and well defined borders. Abdominal ultrasound demonstrated a large retroperitoneal heterogeneous mass. Computed tomography (CT) scan showed a large well defined hyperechoic mass with fibrous septa extending from the left ovary up to the diaphragm. Exploratory laparotomy revealed a giant clearly demarcated fatty tumor adherent to the retroperitoneal fatty tissues. The histopathological examination of the specimen confirmed the diagnosis of the retroperitoneal lipoma.

DISCUSSION: Retroperitoneal lipomas have been reported in various age groups; namely children, middle and old age patients. Based on the characteristic radiological features of the tumor, enormous diagnostic work-up is not justified.

CONCLUSION: Retroperitoneal lipoma is a very rare variant of lipoma, presents with various signs and symptoms that may be misleading. Radiologic imaging especially CT scan is the diagnostic tool of choice. Surgical resection is the main modality of management.

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1. Introduction

Lipoma is a benign proliferation and collection of mature fat cells [1]. It is the most frequent soft tissue tumor in adults [2]. Currently, the exact underlying etiology is not well understood [1]. However, several theories have been proposed like glucose metabolism disturbance, hormone therapy and seeding after resection of a fibroid [2]. Lipomas are classified according to the morphologic characteristics into fibrolipoma, conventional lipoma, angiolipoma, myelolipoma, spindle cell lipoma, and myelolipoma [2]. They are ordinarily occupying the subdermal tissues of the extremities and trunk [1]. Occurrence of lipoma in the retroperitoneal region is an extremely rare finding [3]. In fact, all of the primary retroperitoneal tumors account for only 0.2% of whole body neoplasms. Among these, majority (80%) of the tumors are malignant neoplasm [3]. Retroperitoneal lipoma may arise from the adipose, connective, muscle, lymphatic or nerve tissues, or it may originate from the mesentery, Gerota’s fascia, or urogenital tract [4,5]. They present challenges for diagnosis, management and follow up.

The aim of this study is to report a case of retroperitoneal lipoma in line with SCARE criteria with a literature review [6].

1.1. Patient information

A 34-year-old female presented with abdominal distension and severe back pain for one year duration, during which she had been diagnosed and treated as a case of irritable bowel syndrome. She
also reported weight loss and constipation. Her past medical history was negative.

1.2. Clinical findings

The examination revealed an asymmetrical abdominal distension and everted umbilicus. There was a big irregular mass occupying the whole abdomen reaching into the xiphisternum, firm in consistency, smooth surface and well defined borders. It not attached to the skin and the examiner failed to get above it.

1.3. Diagnostic assessment

Complete blood count was normal. Abdominal ultrasound demonstrated a large retroperitoneal heterogeneous mass. The origin of the mass was not clear. It occupied the whole abdominal cavity beyond measurement, displacing the whole abdominal viscera. CT scan showed a large well defined hyperechoic mass with fibrous septa extending from the left ovary up to the diaphragm displacing the bowel to the right and the stomach upward with normal uterus and right ovary, normal size and density of liver and spleen, no evidence of pelvic lymph node enlargement or bony lesions in spine or pelvic bones (Figs. 1 and 2).

Fig. 1. Sagittal computed tomography scan showing fat density mass occupying all abdominal cavity.

Fig. 2. Coronal computed tomography scan showing fat density mass occupying all abdominal cavity.

Fig. 3. Intraoperative image of the mass.

Fig. 4. Microscopical picture of the specimen showing multiple mature adipocytes.

1.4. Therapeutic intervention

After interdisciplinary discussion regarding the management of the case, exploratory laparotomy was done. Intraoperatively, a giant clearly demarcated fatty tumor was found which was adherent to the retroperitoneal fatty tissues extended to the left ovary and measured about 45*48*13 cm (Fig. 3). After resection, it was 12 kilograms. The histopathological examination of the specimen confirmed the diagnosis of retroperitoneal lipoma (Fig. 4).

1.5. Follow-up and outcomes

Post operatively, the patient was given a unit of whole blood and kept on intravenous fluid with early mobilization. Bowel motion was observed on the 3rd postoperative day. The patient was discharged on the 6th postoperative day uneventfully. The patient was well six months after the operation and she was free from recurrence.

2. Discussion

Retroperitoneal lipomas have been reported in various age groups; namely children, middle and old age patients [4,7–9]. Weniger and associates published their experience with a 73-year-old female presented with recurrent abdominal pain, swelling and obstipation. They opened the patient with suspicion of low grade sarcoma. The histopathological examination of the specimen confirmed the diagnosis of retroperitoneal lipoma [1]. Awais et al reported a 3-year-old boy who presented with progressive abdominal distention and weight gain. Ultrasound guided biopsy revealed normal looking adipocytes without atypia [7]. The current case was a 34-year-old female.

Clinical presentation of retroperitoneal lipoma varies in different reports ranging from abdominal distention to signs and symptoms of sciatica [4,8]. Duran and colleagues presented a case complaining of difficulty in walking and leg pain. The patient reported lower back pain radiating to the left lower limb for one year duration. Provisional diagnosis of disc herniation with sciatic nerve compression was assumed although the magnetic resonance imaging failed to support this diagnosis. Later, the patient was
Table 1
Summary of case reports of retroperitoneal lipomas in adults since 1970.

| Authors, Years [references] | Age | Sex  | Tumor size (cm) | Weight (gram) |
|-----------------------------|-----|------|-----------------|--------------|
| Weniger et al., 2015 [1]    | 73  | Female | 55 × 40 × 10    | 8950         |
| Duran et al., 2015 [6]      | 39  | Female | 6 × 13 × 15     | No data      |
| Saito et al., 2013 [9]      | 65  | Male   | 30 in diameter  | No data      |
| Wei et al., 2013 [5]        | 25  | Female | 20 × 12 × 10    | 1650         |
| Chander et al., 2012 [18]   | 36  | Female | 13.6 × 11.2 × 9.1 | 1300      |
| Chander et al., 2012 [18]   | 65  | Male   | 25 × 12         | No data      |
| Uktita et al., 2009 [3]     | 61  | Female | 15 in diameter  | No data      |
| Singh et al., 2009 [12]     | 65  | Male   | 25 × 12         | No data      |
| Singaporewalla et al., 2009 [10] | 44 | Male   | 15.6 in diameter | No data      |
| Ida et al., 2008 [13]       | 65  | Male   | 22 × 14 × 5     | No date      |
| Kansakar et al., 2007 [4]   | 50  | Female | 30 × 20 × 25    | 5100         |
| Yildirim et al., 2005 [14]  | 61  | Female | 30 × 26 × 17    | 4390         |
| Drop et al., 2003 [19]      | 72  | Female | 12 × 9 × 4      | No data      |
| Drop et al., 2003 [19]      | 60  | Female | 13 × 12         | No data      |
| Martinez et al., 2003 [20]  | 32  | Male   | 20 × 13 × 10    | 3400         |
| Raptopoulos et al., 2002 [21]| 62 | Male   | 20 × 15 × 10    | 790          |
| Fou et al., 2002 [22]       | 52  | Male   | 10.5 × 9.5 × 2  | 145          |
| Forte et al., 2002 [23]     | 61  | Male   | No data         | No data      |
| Marshall et al., 2001 [24]  | 47  | Male   | No data         | 4990         |
| Matsubara N. et al., 2000 [25] | 65 | Male   | 12 × 13         | No data      |
| Acheson et al., 1997 [26]   | 76  | Male   | 20 × 20 × 12    | 596          |
| Zhang et al., 1987 [27]     | 65  | Male   | 50 in diameter  | 19500        |
| Deppe et al., 1985 [28]     | 26  | Male   | 11 × 8 × 3      | No data      |
| Emmrich et al., 1979 [15]   | 49  | Female | No data         | 12,500       |
| Mccarthy et al., 1977 [16]  | 60  | male   | No data         | 4990         |
| Mellin et al., 1977 [17]    | 74  | female | No data         | 9100         |

The abdominal organ (especially the bowel) by the tumor [1,11]. Weniger and associates admitted their case for 18 days postoperatively for management of the paralytic ileus [1].

In conclusion, retroperitoneal lipoma is a very rare variant of lipoma. It presents with various signs and symptoms that may be misleading. Radiologic imaging especially CT scan is the diagnostic tool of choice. Preoperative biopsy (fine needle and tru-cut biopsy) is not mandatory for the diagnosis. Surgical resection is the main modality of management.

Conflicts of interest

There is no conflict to be declared.

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No source to be stated.

Ethical approval

Approval has been taken from Kscien organization for scientific research, no. 51.

Consent

A 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.

Author contribution

Mohammad Hasan M. Al-Ali, Okba F. Ahmed: preparing the draft with final approval of the manuscript.
Shvan H. Mohammed, Marwan N. Hassan, Shadi H. Sidiq, Mohammed Q. Mustafa, Kayhan A. Najjar, Ismael Y. Abdullah: revising the draft, reviewing the literature and follow up with final approval of the manuscript.
Abdulwahid M. Salih: Revising the manuscript. Final approval of the manuscript.

Fahmi Hussein Kakamad: writing the manuscript, reviewing the literature and final approval of the manuscript.

Registration of research studies

It is a case report, not applicable.

Guarantor

Fahmi Hussein kakamad.

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