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Case Report

A Very Rare Case of Huge Left Retroperitoneal Cystic Schwannoma Masquerading as Left Para-Ovarian Cyst in 34 Year Old Nulliparous Lady- A Case Report

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Abstract

Introduction: *This case highlights the very rare case of large abdominal cystic schwannoma with a prevalence of <0.4%, and also masquerading as a left para-ovarian mass deriving blood supply from left ovarian vessels.*

Clinical findings: *This was a nulliparous lady with primary infertility with main complaints of large abdominal mass and left sided pelvic pain and sometimes sharp pain radiating to left leg.*

Interventions: *Pre-operative necessary imaging like MRI and CECT helped in localising the mass, and its close attachment to surrounding vital structures like left ureter, bowel, and adherent to left iliac vessels. A multi-disciplinary management to surgical approach, including cardiothoracic and vascular surgeons, was arranged accordingly. She had an excellent surgical outcome, with relief of pressure symptoms and conceiving subsequently.*

Conclusion: *Symptoms of sharp electric shock like pain radiating to left leg, may be suggestive of retroperitoneal rare tumours, and should call for advanced imaging and multi disciplinary input, to complete surgical resection and optimise outcomes.*

Keywords: *"Case Report", "Retroperitoneal Mass", "Abdominal Schwannoma", "Para-ovarian Mass".*

Introduction

Only 0.5-5% of all retroperitoneal tumours are schwannomas, and their malignant transformation is very rare(1). They occur five times as commonly in females as in males, and arise from Schwann cells on peripheral and central nerves(2), occasionally arising from gastrointestinal tract, stomach being the most common. WHO has abolished the term "Malignant Schwannoma", but they may very rarely belong to spectrum of Malignant Peripheral Nerve Sheath Tumours(MPNST)(3). These may be very aggressive tumours with early distant spread and poor overall survival. Benign Schwannomas may form a part of genetic conditions like autosomal dominant neurofibromatosis, and schwannomatosis(4). Diagnoses pre-operatively is often difficult, and inaccurate, as in this scenario, due to presence of non-specific findings on imaging. Hematoxylin & eosin (H+E) staining typically reveals hypocellular(Antoni-A) and Antoni-b(hypercellular areas), spindle cells arranged in fascicles with S-100, CD-117, CD-34, SOX-10 useful in immunohistochemistry staining(IHC) and differentiation(5).

Patient information:

A 34 year old nulliparous lady, attempting to conceive, and awaiting In Vitro Fertilisation treatment, presented in outpatient department of general Gynaecology consultant, with complaints of abdominal fullness(more on left side), with early satiety, heaviness in left flank and legs with particularly electric shock like sensation in left leg, on 11/9/2024. Her last menstrual period was on 26/9/2024. She had a poor quality non-contrast MRI whole abdomen done outside, which revealed a large 14-15cm cystic left ovarian tumour densely adherent to left pelvic sidewall. There was no other abnormality reported in this scan. On clinical examination, there were no palpable neck/axillary/groin nodes, both breasts and thyroid were normal, and abdominal large mass occupying mostly left lower abdomen, with somewhat restricted mobility. There was weakness in her left leg, but both legs were symmetrical with no swelling. Per speculum and per vaginal/rectal examination did not reveal any abnormality, with the mass high up, and not felt through Pouch of Douglas.

Investigations:

Her liquid based cytology(LBC) on 11/9/25 was satisfactory, negative for intra-epithelial lesions/malignancy. Due to cost constraints, an intravenous contrast CT scan of whole abdomen on 14/9/2024 revealed a large well-defined bilobed thick walled(4.1mm)cystic lesion of size 9.5x13.4x12.9cm in left iliac fossa and left lumbar region (Fig-1) along anterior aspect of left psoas, left iliacus with thick enhancing septa within (5.5mm thickness). The lesion was seen separate from left ovary, but was supplied by left gonadal vessel with associated mild thickening and heterogeneity of left ovarian suspensory ligament. It causes abutment and medial displacement of left ureter, but no hydroureteronephrosis. Posteromedially, the lesion is abutting the left common iliac and external iliac artery, with minimal luminal narrowing; and also causing mild effacement of left common iliac vein-Impression was of left complex para-ovarian 13.4x12.9 cm cyst, with no obvious signs of adhesion or bowel invasion(Fig-1). There were also few sub-centimetre lymph nodes in left pelvic wall and para-aortic region, along with 3.2x2.6cm intramural fibroid in anterior myometrium with subserosal extension.

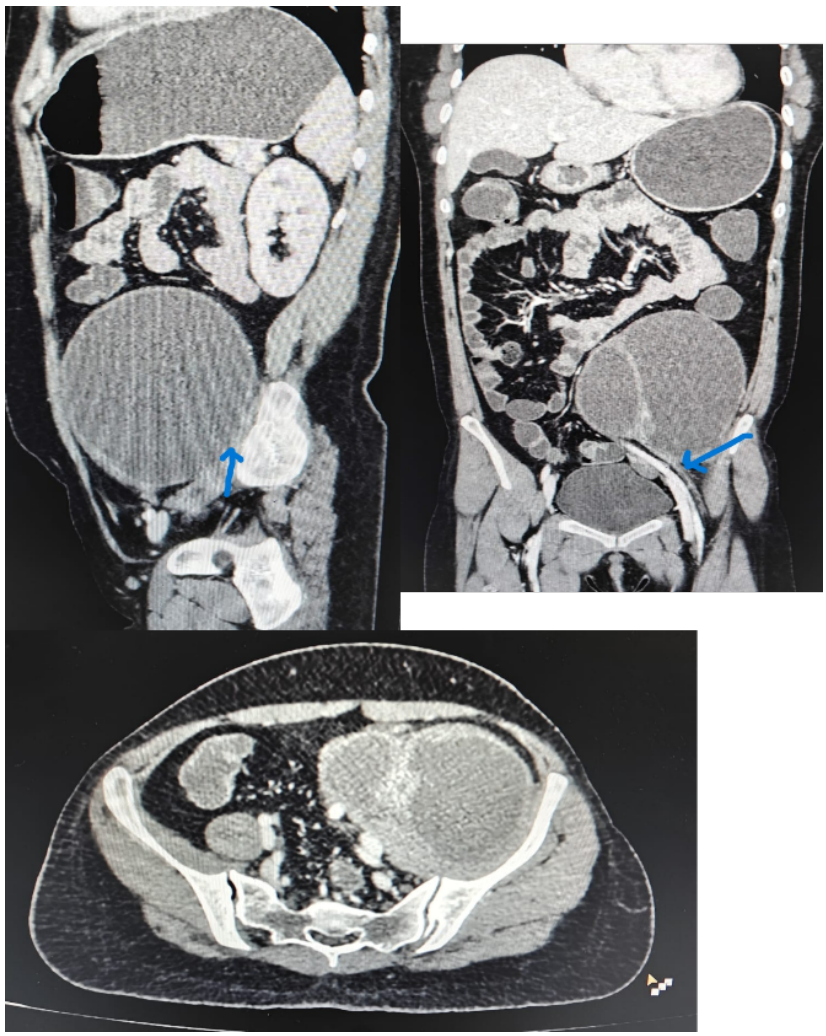

Fig-1: CECT findings of large left abdominal mass

With thick septa seen inside 13 cm complex supposed left ovarian mass, she underwent tumour marker analysis. Her LDH:208IU/L,CA-125:14.56U/ml,CEA<0.5ng/ml,CA19-9:4.11U/ml, b-Hcg<2.39IU/L, AFP:1.20ng/nl were all normal. She wanted surgical management for relief of her symptoms, and also to facilitate ovum pick up during IVF treatment later-this was proving to be difficult due to the huge mass. We planned a diagnostic laparoscopy/laparotomy and proceed on 8/10/24, with arrangement for frozen section-resection of mass and myomectomy, and with plan to ensure fertility preservation, if possible.

Therapeutic Intervention: She underwent the procedure on 8/10/2024. Initial laparoscopy revealed a huge left sided retroperitoneal abdominopelvic mass, completely encased by sigmoid bowel, and omentum, with left ureter encased within mass(not visible initially) and left external iliac vessels entering below mass(Fig2B and attached video). We started with mobilisation of sigmoid bowel medially, and slightly exteriorising mass(Fig-3), but thereafter had to convert to laparotomy (prior consent obtained) to ensure safety of left ureter, and left

iliac vessels. The uterus, with left tube and left ovary were seen distinct from the mass, but the left infundibulopelvic/ovarian vascular pedicle was seen supplying the mass and running into it (Fig-2A).

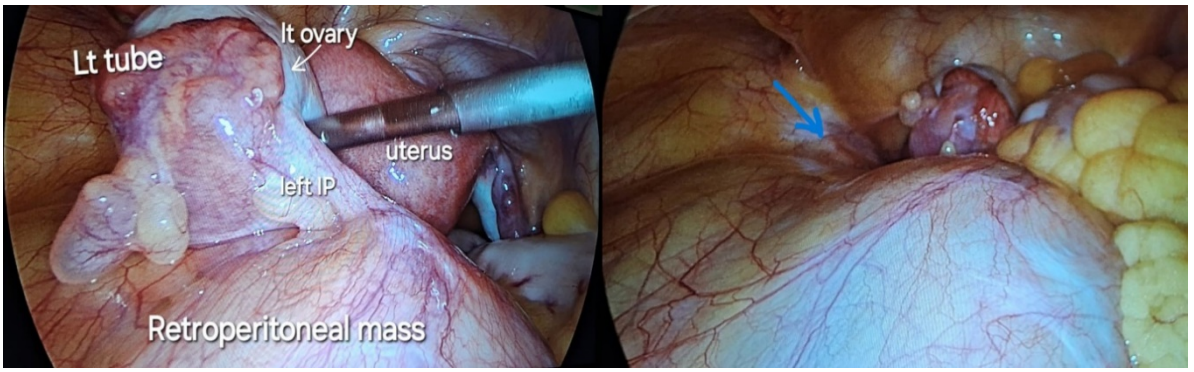

Fig2A: Retroperitoneal large mass separate from left tube and ovary and supplied by left gonadal vessels, **2B:** Blue arrow pointing at entrance of left external iliac vessels into and below the mass

Video 1: Laparoscopic findings of large left retroperitoneal mass covered by sigmoid and mesosigmoid

WhatsApp Video
2025-12-26 at 16.32.

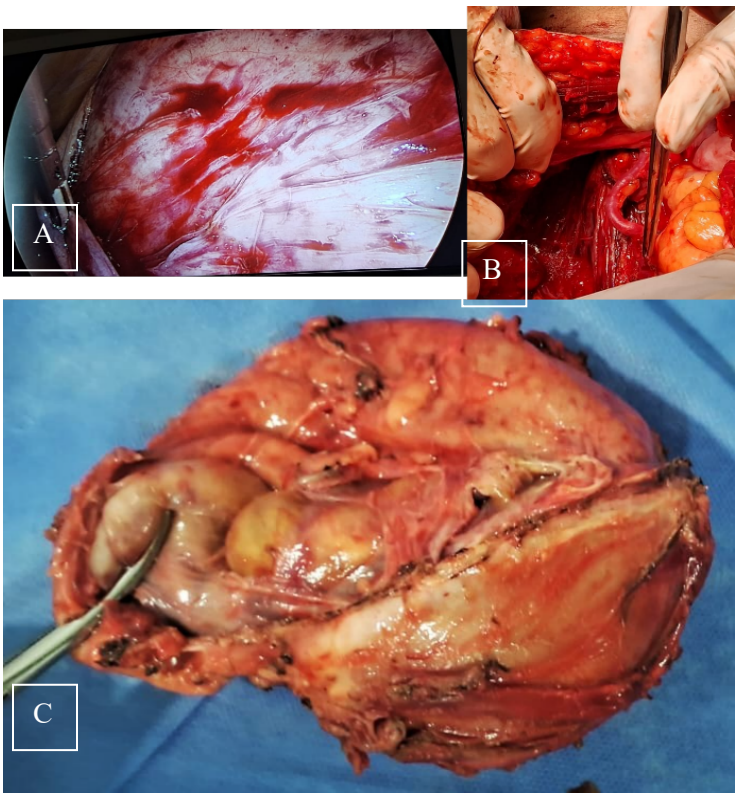

Fig-3A: Laparoscopic dissection of left mesosigmoid to reveal mass, **Fig-3B**: RGSV graft to repair Lt EIA defect, **Fig-3C:** Complete resected mass en bloc

On laparotomy, after medial and posterior dissection, the 13x12 cm large cystic mass was found to be densely adherent to adventitia of left external iliac arteries, left Gerota s fascia, anterior layer, left para aortic area and sigmoid mesocolon. Left infundibulopelvic ligament had to be coagulated and divided with gross sharp and blunt dissection with Ligasure, after left ureterolysis. The mass was also densely adherent to underlying lateral aspect of psoas muscle bed and splanchnic nerves, and there was a bit of denervation and removal of muscle fibres, to exteriorise mass. Part of lateral wall(<180 degrees)(<1cm) left external iliac artery, just distal to common iliac bifurcation had to be resected, with help of cardiothoracic and vascular surgeons, to ensure R0 complete resection. The right great saphenous vein(RGSV) was harvested, and the RGSV graft was anastomosed between ends of Left external iliac artery after freshening margins (Fig-3B). Distal popliteal and tibial pulsations were ensured and saturation of oxygen to left distal limb confirmed. The entire mass was send for frozen section, which appeared to be benign but was indeterminate (Fig-3C).

She received 2 units of PRBC transfusion.

Outcomes and recovery:

Post-operatively her recovery was uneventful, with normal bowel and bladder habits, but there was slight persistence of weakness in left lower limb with paresthesia in left thigh initially. This gradually subsided, and after 3 months, she conceived with in vitro fertilisation, following successful ovum pick up. She is currently 11 weeks pregnant with continuing antenatal care under our supervision.

Final Diagnosis:

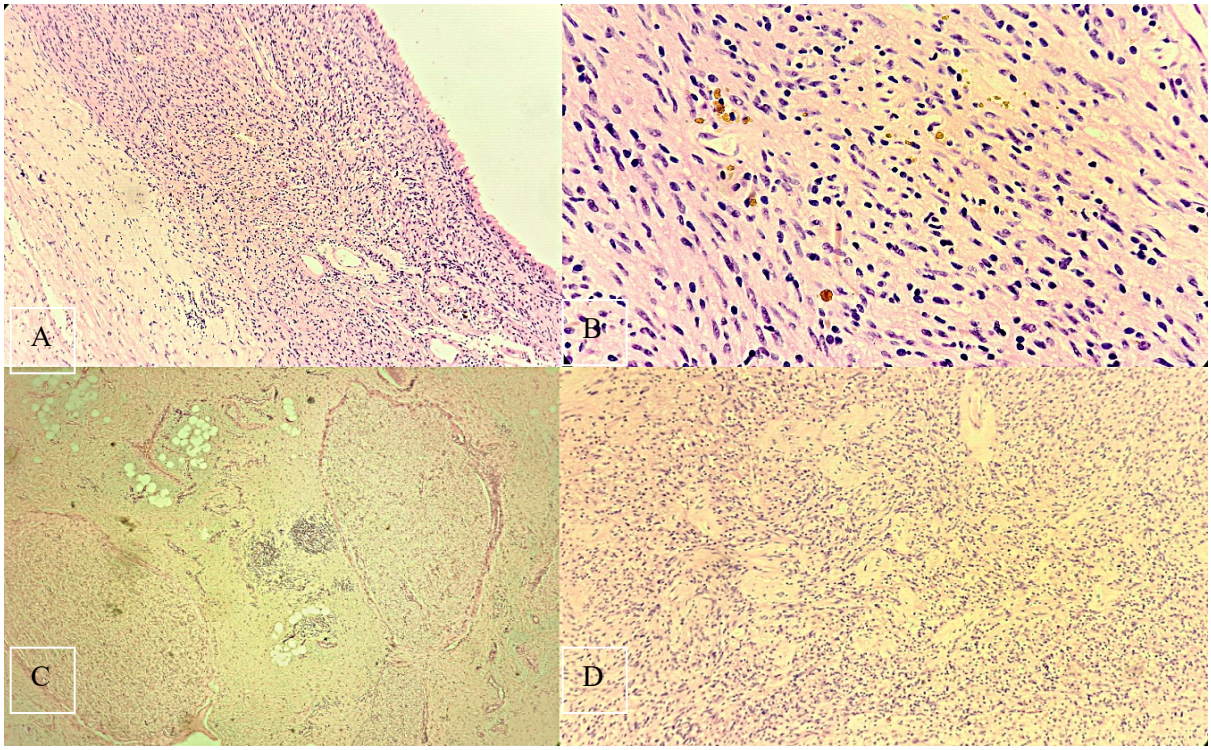

FIG 4B-400X-Cellular areas containing **FIG-4A**(above)-Cyst wall of tumour mass showing both hypo & hypercellular areas like Antoni A & B(100 X); spindle cells arranged in fascicles, **Fig-4C** Intact nerve trunk in periphery(H & E-100X) **Fig-4D**-Cellular areas showing spindle cells and few thick lined hyalinized vessels (H & E-100X)

Diffuse S-100 positivity confirmed the diagnosis of cystic schwannoma (Fig-5).

The final histopathology and immunohistochemistry (IHC) of the mass revealed a large cystic schwannoma with no malignant elements (Figs-4 H&E and 5-IHC).

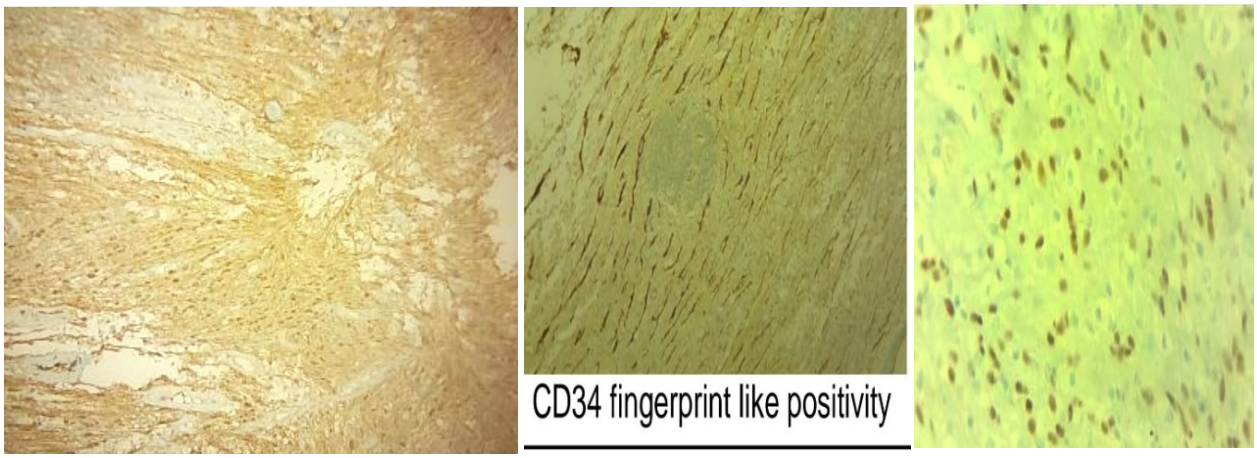

Fig-5: Diffuse S-100 positive(left) along with CD-34 finger positivity & SOX10 positive(right) confirming cystic schwannoma on IHC.

Post operatively, she underwent follow up with neurologist and regained good mobility of left leg with consistent physiotherapy. A follow-up MRI revealed small 1.8x1cm remnant/residual schwannoma near L4-5 nerve root with benign features. She obtained a second opinion from NIMHANS, Bangalore, which confirmed diagnosis of benign cystic schwannoma with S-100 positivity, SMA positivity for smooth muscle component, CD99 focally positive, while GFAP was negative, with low Ki67 1-2% proliferation index. She is currently 11 weeks pregnant after 2nd IVF cycle successful embryo transfer.

Discussion

Retroperitoneal tumours with gross adhesions can mimic intra-abdominal masses and can prove to be a surgical nightmare in the absence of pre-operative planning or unavailability of multidisciplinary team. In our case, the myriad non-specific symptoms masked the symptom of left leg electric shock like sensation, which could have been a pointer to a retroperitoneal mass. A repeat MRI in our 1.5 Tesla machine could have been useful, but was precluded by cost constraints. The CECT revealed close proximity to the left external iliac vessels, but not invasion, and the differential diagnosis of a left para-ovarian cyst was provided, due to the confusing supply from the left ovarian vein.

The presence of the CTVS team on standby, along with general surgeon and surgical oncologist, ensured a multi-disciplinary approach to help facilitate complete removal of mass and minimise denervation injury to as less as possible. The option of oocyte preservation was provided before surgery, however she had declined it. She is currently continuing antenatal care, with significant follow-up from our unit regarding mobility in pregnancy, avoiding VTE, and ruling out any chances of autonomic dysreflexia.

Informed consent: All figures and videos have been obtained after verbal and written permission from patient, after confirming her anonymity and obtaining her husband and her consent.

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Declarations:

1. The authors declare that they did not receive any funding for this research.

2. The authors do not have any confict of interest.

3. Informed consent and ethical approval was obtained both from patient and institutes to reproduce pictures and anonymised data for purposes of publication.

4. Authors 1& 2 conceptualised and designed the article, 3 & 4 helped write the article, 1 & 3 reviewed the article before final submission.

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