***Case report***

**Uterine Lipoleiomyoma Presenting with Postmenopausal Haemorrhage and Pulmonary Embolism: A Rare Case Report**

**Abstract :**

Lipoleiomyoma consists of variable proportions of mature lipocytes and smooth muscle cells. The uterine lipomatous tumours are extremely uncommon benign neoplasms. Uterine lipoleiomyoma is a benign tumour that is a leiomyoma variation. This case study aims to report and analyse a rare case of uterine lipoleiomyoma presenting as postmenopausal bleeding. Here we present a case of a 61-61-year-old female, menopaused for over 10 years. The patient initially had her first episode of postmenopausal bleeding 5 years ago; however subsequently defaulted on her follow-up. Rare lipomatous uterine tumours can be difficult to diagnose. Based on the World Health Organisation publication, variant forms of leiomyomas accounted for about 10% of total leiomyomas. In conclusion, optimally resected lipoleiomyoma has shown no documented disease recurrence. Rarely, small, asymptomatic lipoleiomyomas do not require treatment and can be managed conservatively, similar to leiomyomas.

**Keywords**: Uterine Lipoleiomyoma, Postmenopausal, Bleeding, Tumour

**INTRODUCTION**

The uterine lipomatous tumours are extremely uncommon benign neoplasms. Uterine lipoleiomyoma is a benign tumour that is a leiomyoma variation [10]. Uterine lipomas, first described by Lobstein in 1816, are subdivided into “pure lipomas” and “mixed lipomas” depending upon the absence or presence of muscle tissue. Lipoleiomyomas classified as the latter type were first described in 1965, and they were characterised as being composed of varying amounts of adipose tissue and smooth muscle cells [3,8,9]. The histogenesis of these benign tumours is still unknown, though there are several theories supported by immunohistochemical staining [7]. Their reported incidence varies from 0.03 to 0.2% [3]. Unlike conventional leiomyomas, in which the size somewhat declines after menopause, uterine lipoleiomyomas are characterised by progressive enlargement even after menopause [1,2]. We report a case of uterine lipoleiomyoma because of its rarity.

**CASE HISTORY**

Here we present a case of a 61-year-old female, menopaused for over 10 years. The patient initially had her first episode of postmenopausal bleeding 5 years ago; however subsequently defaulted on her follow-up. She presented this time with hypovolemic shock from massive postmenopausal bleeding requiring resuscitation. During the hypovolemic event, her uterus was equivalent to a 30-week size gravid uterus, non-tender, firm, mobile, and regular margin, with no other organomegaly. Pelvic examination was unremarkable except for some fullness at the Pouch of Douglas.

Bedside ultrasonography showed a grossly enlarged uterus with well-demarcated heterogeneous hyperechoic mass occupying the endometrial cavity. There were no adnexal masses or free fluid. Endometrial sampling was attempted; however came back as non-representative sampling. A CT scan imaging, which was done, showed a large lobulated mass extending from the pelvis to the upper abdomen, measuring 14.0cm(AP) x 20.6cm(W) x 20.0cm(CC), which had predominantly fat content with ill-defined enhancing components within. Coarse calcifications were seen within this lesion, and it was well-encapsulated within a thick, enhancing wall. (Figure 1) An incidental finding of pulmonary embolism was also diagnosed. The patient was then subjected to a diagnostic ultrasound-guided biopsy of the mass, which only reported fat-containing lesion.

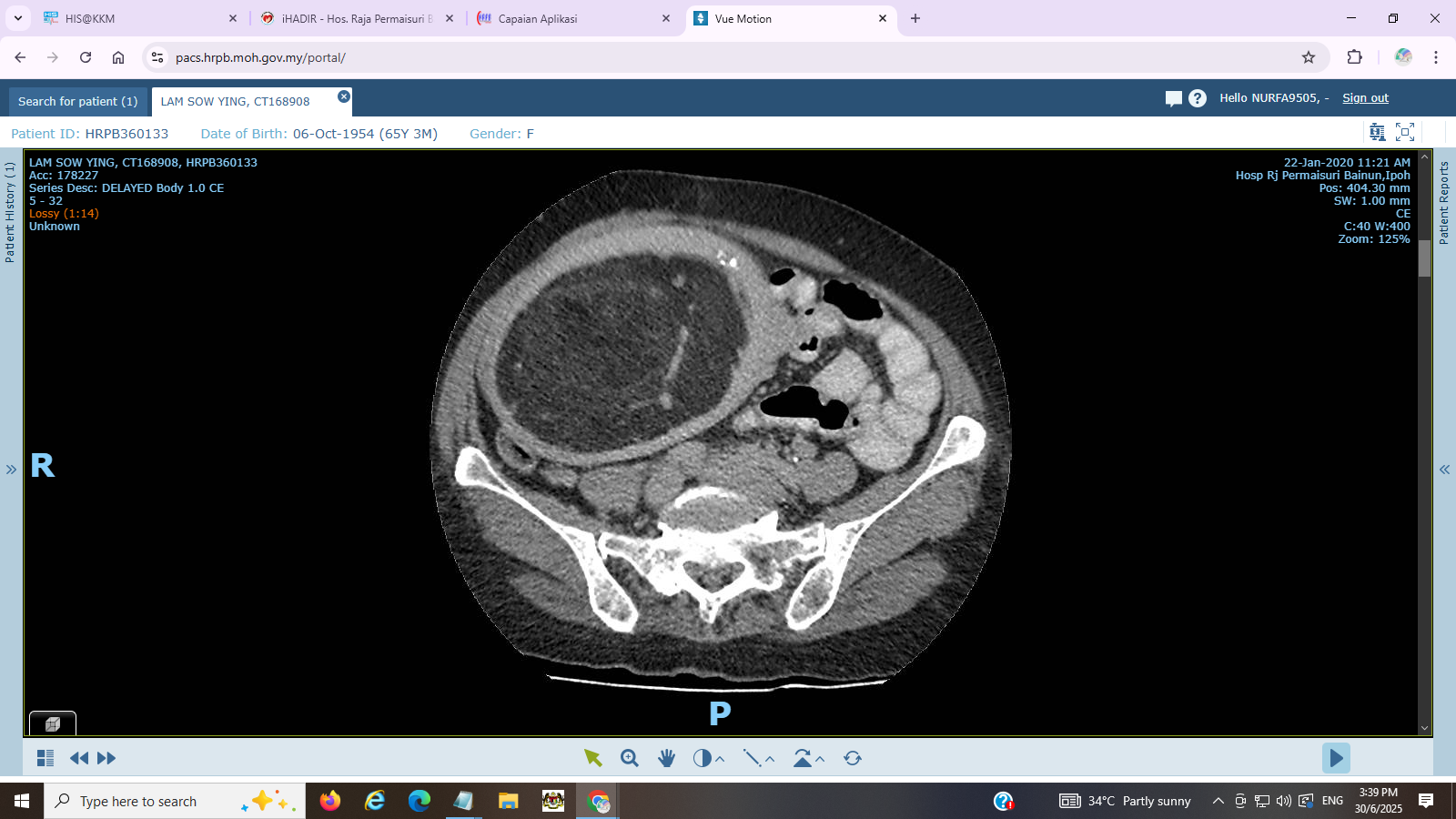


Figure 1: CT scan demonstrated a large lobulated mass, which had predominantly fat content with ill-defined enhancing components within.

She underwent a total abdominal hysterectomy, bilateral salpingo-oophorectomy after a course of anticoagulants. Intraoperatively, the uterus was equivalent to 24 weeks size of a gravid uterus. The dissected specimen revealed a huge well-circumscribed posterior intramural firm fibro-fatty mass measuring 18 x 23 x 16 cm pushing the endometrial cavity anteriorly. It is 1mm away from the nearest serosa. It had patchy areas of fibrotic tissue. There was no obvious area of haemorrhagic necrosis or calcification. The endometrium was grossly normal, and the uninvolved endomyometrium measured 15-20mm in thickness. (Figure 2)

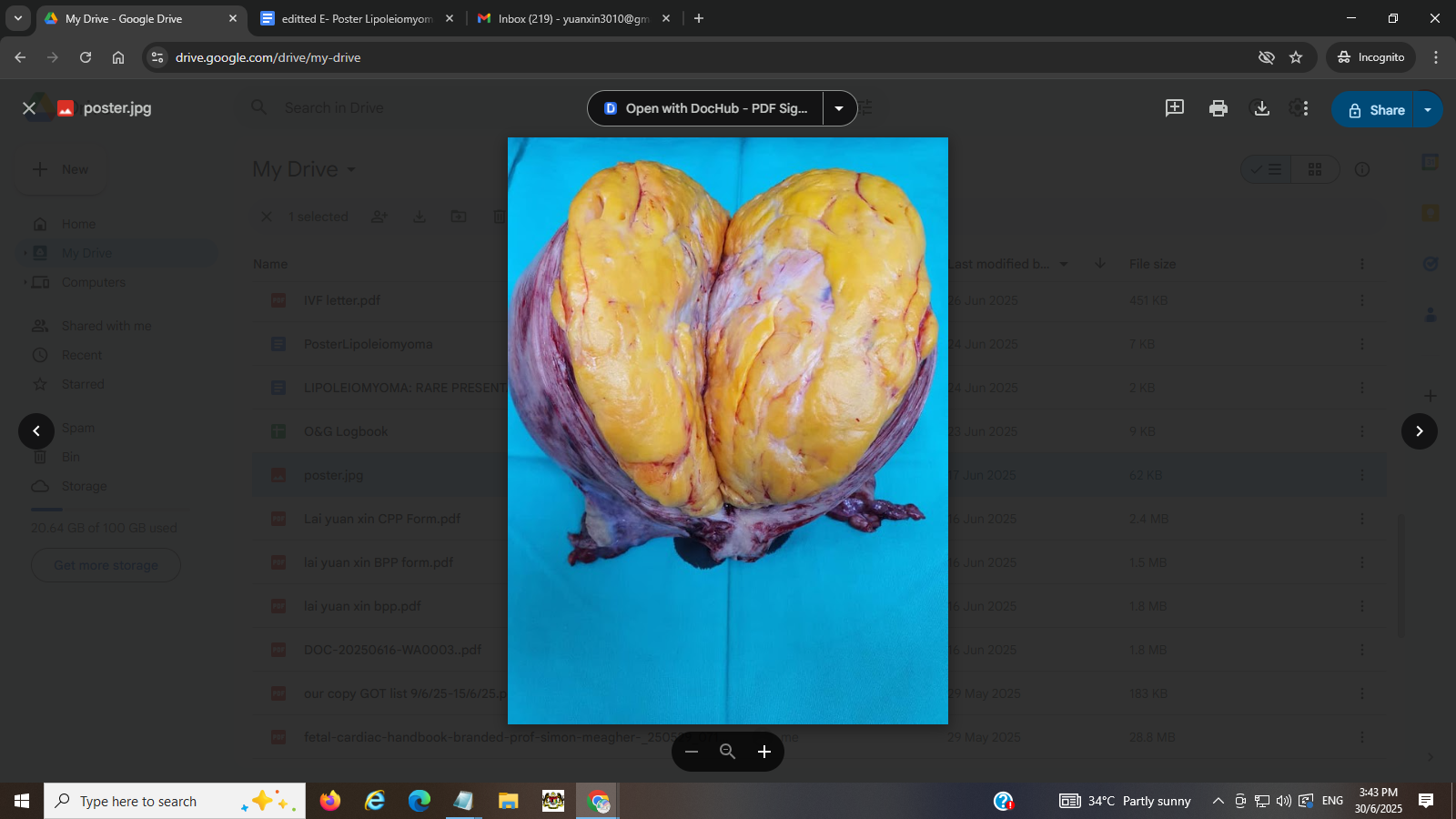


Figure 2: Cut section of intramural firm fibro-fatty mass

Histopathology examination revealed a uterine lipoleiomyoma. The intramural mass is composed mainly of mature fat cells without nuclear atypia mixed with bland, spindle-shaped smooth muscle cells in a whorled pattern. The rest of the study was normal.

The patient recovered well post-surgery and was discharged from the gynaecology clinic after review.

**DISCUSSION**

Rare lipomatous uterine tumours can be difficult to diagnose. The common presenting complaint of uterine lipoleiomyoma would be progressive uterine enlargement with postmenopausal bleeding mimicking the presentation of leiomyosarcoma. This patient, however, presented with massive postmenopausal bleeding resulting in shock and pulmonary embolism. The inconsistent abdominal finding of the initial presentation and final specimen may suggest intrauterine blood collection during the presentation. The management dilemma was made worse with the patient having pulmonary embolism, which would subject the patient to high-risk immediate surgery, and the anti-coagulant started could have worsened her uterine bleeding.

The patient’s final diagnosis of uterine lipoleiomyoma, though rare, is actually the most common variant of leiomyomas in post-menopausal women (85.7%) [2]. Based on the World Health Organisation publication, variant forms of leiomyomas accounted for about 10% of total leiomyomas [4]. Generally accepted pathogenesis of lipoleiomyoma could be either from lipomatous metamorphosis of a pre-existing leiomyoma [5] or lipomatous tissue arising from direct transformation of smooth muscle cells or transformation of totipotent mesenchymal cells within the uterine myometrium [1]. In both conditions, lipoleiomyomas formation was attributed to conditions of low oxygen/[hypoxia](https://www.sciencedirect.com/topics/medicine-and-dentistry/hypoxia), or serum starvation [1]. Given that the majority of patients are postmenopausal women, it is hypothesised that abnormal intracellular storage of lipids may be promoted by a variety of lipid metabolic disorders or other related problems that are linked to estrogen insufficiency could contribute to lipomatous metaplasia [7]. Microscopically, the tumour is composed mainly of mature fat cells without nuclear atypia mixed with bland, spindle-shaped smooth muscle cells in a whorled pattern, like in this patient (Figure 3).

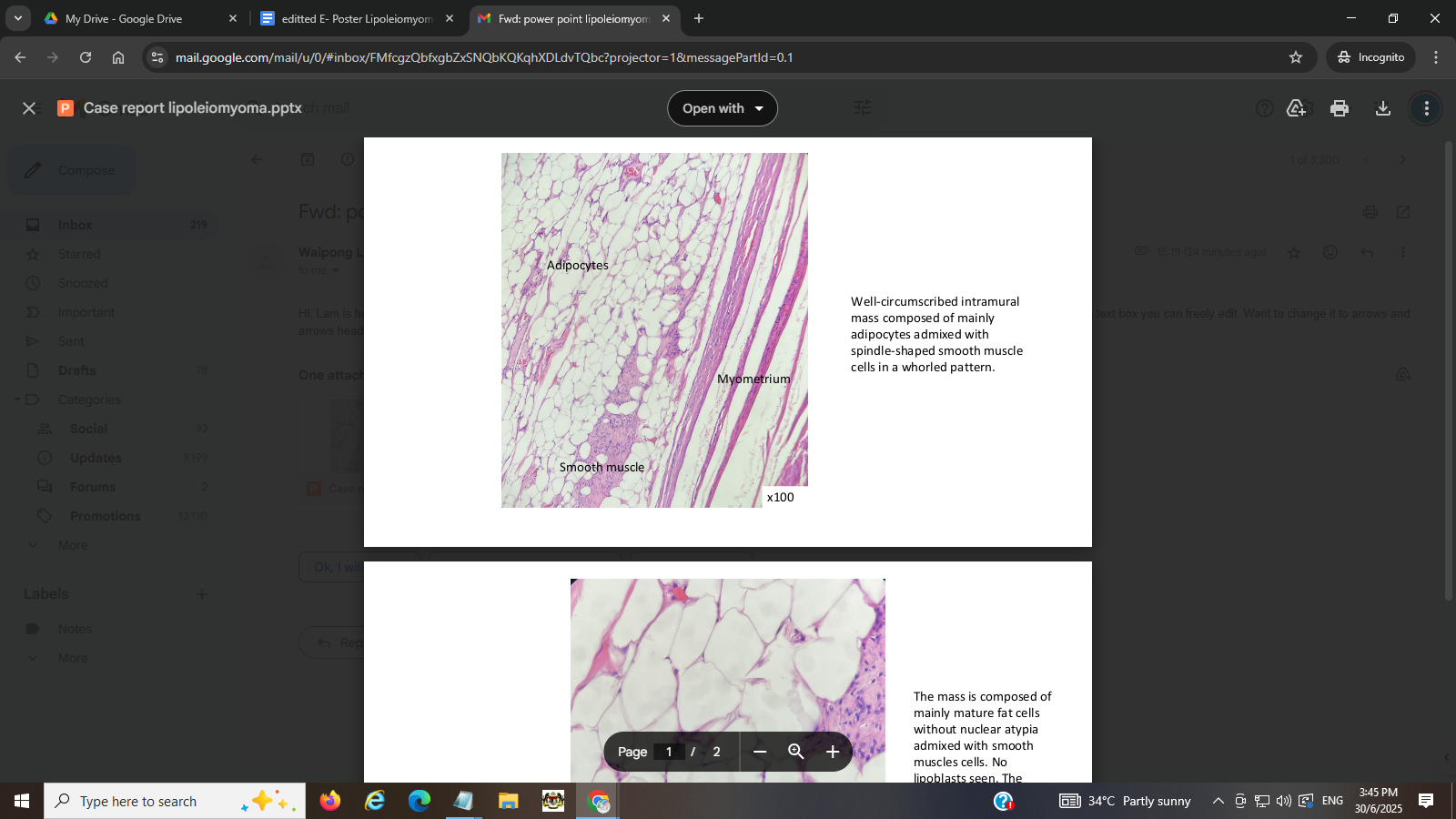
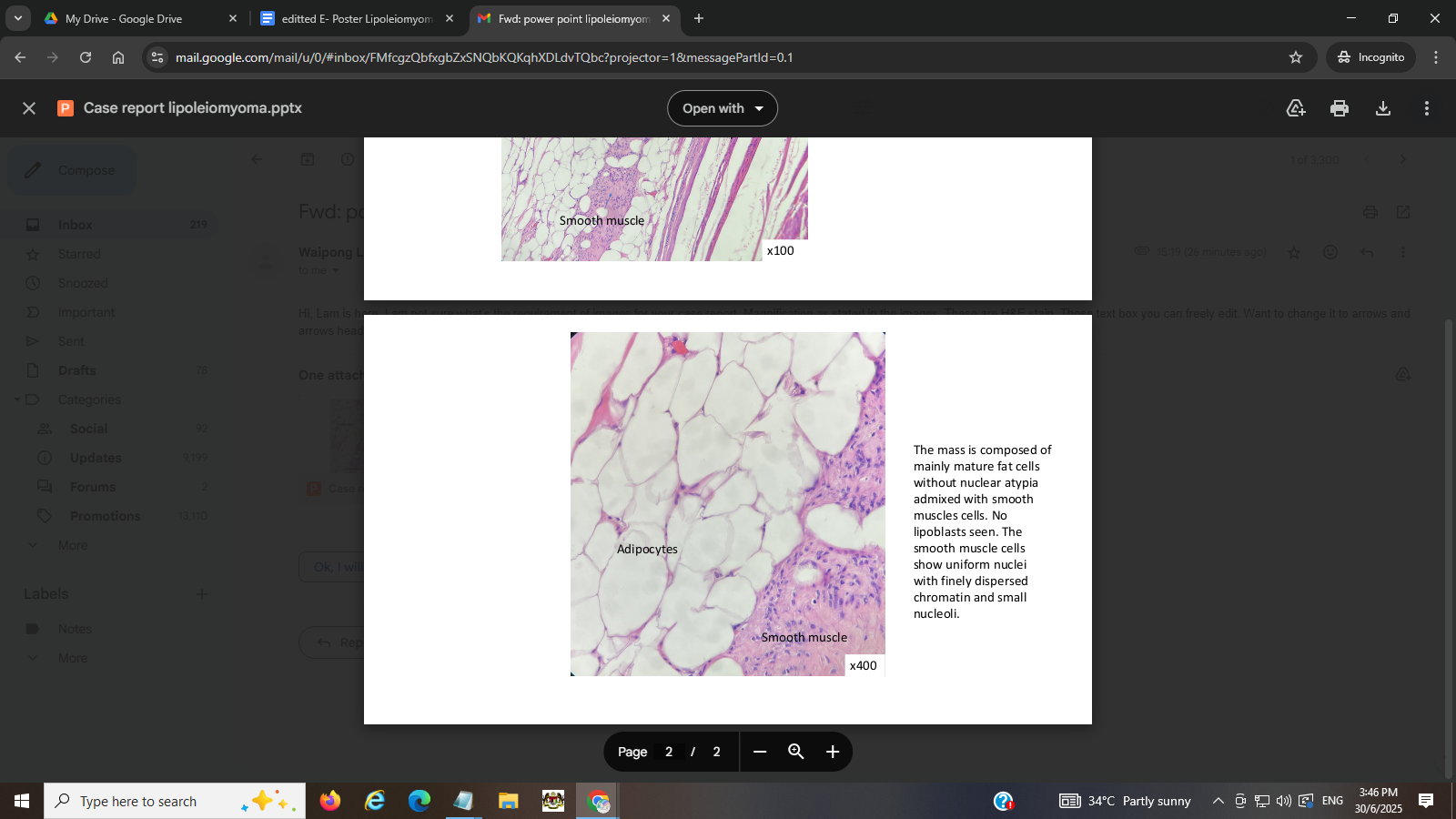
3A 3B

Figure 3A: Well-circumscribed intramural mass composed mainly of adipocytes, admixed with spindle-shaped smooth muscle cells in a whorled pattern. Figure 3B: The mass is composed mainly of mature fat cells without nuclear atypia, admixed with smooth muscle cells. No lipoblasts seen. The smooth muscle cells show uniform nuclei with finely dispersed chromatin and small nucleoli.

**CONCLUSION**

Even though lipoleiomyomas have low malignant potential, patients may present with severe symptoms, and the rapidly growing tumour size would make clinicians suspicious of malignant uterine tumours. Hysterectomy would be commonly offered to post-menopausal women with such symptoms, and final histopathological examination would confirm the diagnosis of this benign condition. An optimally resected lipoleiomyoma has shown no documented disease recurrence. Rarely, small, asymptomatic lipoleiomyomas do not require treatment and can be managed conservatively, similar to leiomyomas [6].

**CONFLICT OF INTEREST**

The authors declare that there is no conflict of interest.

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