ORIGINAL RESEARCH PAPER

Histopathology

LEIOMYOMA OF OVARY: A RARE ENTITY

KEY WORDS:

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BACKGROUND

Ovarian leiomyoma is one of the rarest benign tumors of the ovary, mostly seen in women of reproductive age group (25-50 years).

Ovarian leiomyoma accounts for **about less than 1% of all benign ovarian tumors**. It is a mesenchymal tumor deriving from the smooth muscle tissue. Ovarian leiomyoma cells can originate from vascular smooth muscles as well as from smooth muscle of the ovarian ligaments, multipotent cells of the ovarian stroma or undifferentiated germ cells.

RISK FACTORS:

AGE- Reproductive age group females, **Hormonal influence-** Estrogen and progesterone play a role in formation of smooth muscle tumors, long term use of contraceptives, **Obesity-** Increased body fat can lead to higher levels of estrogen, which may promote growth of tumor.

CASE REPORT

• **AIM:** To study leiomyoma in ovary.

• **MATERIALS AND METHOD:** A retrospective database was generated from the patient medical records of our institution that is **Index medical college and hospital research center (IMCHRC)** for the years between 2019-2024.

• Out of the 6 patients who presented with solid ovarian mass. Out of which, 2 patients were diagnosed with ovarian leiomyoma, 3 patients with Fibroma, 1 patient with Thecoma after histopathological studies and was confirmed by immunohistochemistry.

• The average lesion size was 1 cm in diameter.

• Investigations revealed that hemogram showed Hemoglobin levels of patients with tumor varied from -7.2 g/dl-9.2g/dl.

Radiological findings

• **Ultrasonography abdomen** revealed 13.2x11.9 x10.2 cm to 16.1x10.8x10.6 cm size heterogeneously hypoechoic lesion involving the anterior myometrium obliterating the endometrial cavity. Ovarian mass of size varying from 1.8x 1.5cm to 2.3 x 1.6 cm.

• **MRI** is the main preoperative diagnostic method of ovarian leiomyoma.The tumors are usually well circumscribed with low signal intensity mass on T1 weighted imaging with mixed signal intensity on T2 weighted imaging. When MRI reveals solid ovarian tumors similar to uterine leiomyoma, ovarian leiomyoma should be considered.

Total Cases	Age	Complaints/duration	Tumor size	Histological Diagnosis	IHC MARKERS				Prognosis
					SMA	INHIBIN	DESMIN	RETICULIN	
1	41 yr	heavy menstrual flow and Pain Abdomen /4 months	1 cm	Ovarian leiomyoma	+	_	+	+	Good
2	34 yr	Pain abdomen /5 years	3 cm	fibroma	_	_	_	+	Good
3	29 yr	Menorrhagia / 4 months	2 cm	fibroma	_	_	_	+	Good
4	31 yr	Primary infertility/3 years	1 cm	Ovarian leiomyoma	+	_	+	+	Good
5	50 yr	Pelvic mass /7 years	1 cm	Thecoma	_	+	_	_	Poor
6	47 yr	Pain abdomen /8 months	2 cm	fibroma	_	_	_	+	Good

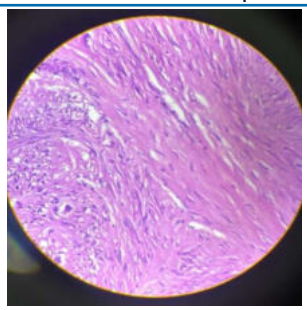
UTERUS-CERVIX- BILATERAL ADENEXA

UTERUS

OVARY

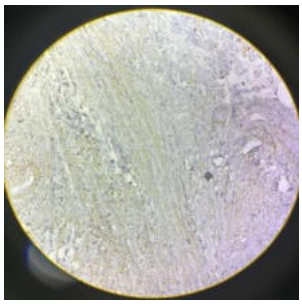
GROSS HISTOPATHOLOGY SPECIMENS

H&E 10X histology image showing whorled pattern of smooth muscle



H&E 40X histology image showing smooth muscle cells are uniformly spindle shaped or elongated with blunt-ended or cigar-shaped nuclei. Mitotic activity is absent or very low, and cellular and nuclear pleomorphisms are absent.

IHC- Immunoreactivity for RETICULIN



IHC- Marked immunoreactivity for SMA (Smooth Muscle Actin)

DISCUSSION

• The study showed that many patients with ovarian leiomyomas are multigravidas. This suggests that estrogen may play a role in the development of ovarian leiomyomas. Another possible mechanism suggests that tumor may arise in developmentally abnormal ovaries . This suggests that the tumor can originate from the smooth muscle cells in the walls of blood vessels, in the cortical stroma, in the hilus, in the corpus luteum, or in the ovarian ligament.

• Ovarian leiomyomas must also be differentiated from FIBROMA,THECOMA.

• Fibroma is comprised of bundles of spindle shaped cells with pointed nuclei and often exhibit storiform pattern rather than the fascicular pattern. Masson Trichrome helps to distinguish smooth muscle cells from fibrous tissue.

• Thecoma- is comprised of predominant population of cells having ovoid to round nuclei and pale gray
cytoplasm, tumor may have spindled nuclei reflecting overlap between fibroma and thecoma.

• A common surgical approach to ovarian leiomyomas in middle-aged to elderly patients is hysterectomy in conjunction with bilateral salpingo-oophorectomy. For bilateral ovarian leiomyomas, bilateral oophorectomy is often required.

CONCLUSION

Despite its characteristic morphology, they need to be distinguished from other benign tumours like ovarian fibroma, thecoma and broad ligament leiomyoma extending into the hilum of ovary, pedunculated or wandering

leiomyoma.

A diagnosis of ovarian leiomyoma is made after a histopathological examination. Surgical treatment depends on patient's age, her intention to remain fertile, the extent of the lesion and concomitant problems affecting her genital organs.

Ovary is an uncommon site for leiomyoma, most common site being uterine leiomyoma.

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