

Presentation of ovarian metastases on F-18 FDG PET-CT

Rajesh Kumar, Deepanksha Datta

All India Institute of Medical Sciences Jodhpur, India

INTRODUCTION

Ovarian metastases are infrequent ovarian neoplasms and associated with poor prognosis (1,2). The route of spread can be hematogenous, lymphatic, trans-coelomic or direct in nature (3,4,5). Accurate diagnosis of the metastases and differentiation from primary ovarian malignancy is important in its treatment management and prognosis (6). We characterize the nature of radiologically identified ovarian metastases in terms of metabolic activity, laterality and attenuation on F-18 FDG PET/CT.

METHODS

This retrospective study was done from February 2021 to August 2022. The patients with known non-ovarian malignancies with increased FDG uptake in either or both ovaries were considered positive of ovarian metastases. The parameters recorded included laterality, attenuation (solid/cystic/mixed) and SUVmax of metastatic ovarian lesion. On CT attenuation, the lesion was categorized into one of the following groups, i.e solid, cystic (more than 80 % of the lesion showing cystic attenuation) or mixed (upto 50% of both solid and cystic attenuation). SUVmax was derived from the single image plane that had the highest SUV.

RESULTS

9 female patients met the inclusion criteria and their characteristics are shown in Table-1. Breast was the most common primary malignant site (78%). A total of 12 ovarian lesions were detected. Six patients (67%) had unilateral lesions and left ovary (67%) was most commonly involved in unilateral lesions. Most of the ovarian metastases were predominantly cystic in nature (44%), followed by mixed (34%) and solid (22%). Median SUV max (interquartile range) for ovarian metastases was 5.9 (7.1) g/dl. All nine patients had imaging evidence of distant metastases (besides ovarian) at the time of presentation.

Table - 1: PATIENT CHARCTREERISTICS

S. No.	AGE (Yr)	PRIMARY MALIGNANCY		OVARIAN METASTASES			CA-125	DISTANT METASTASES
		DIAGNOSIS	SUV max	SUV max	ATTENUATION	LATERALITY		
1.	38	Breast	4.6	5.9	Cystic	Right	Normal	Yes
2.	56	Colon	26.2	12.6	Cystic	Bilateral	Normal	Yes
3.	57	Breast	21	1.5	Mixed	Right	Raised	Yes
4.	64	Liver	9.2	3.7	Mixed	Bilateral	Normal	Yes
5.	29	Breast	5.1	11	Solid	Left	NA	Yes
6.	57	Breast	Mastectomy	6	Cystic	Left	NA	Yes
7.	49	Breast	Mastectomy	2	Cystic	Bilateral	NA	Yes
8.	27	Breast	9.4	9	Mixed	Left	NA	Yes
9.	41	Breast	Mastectomy	5	Solid	Left	NA	Yes

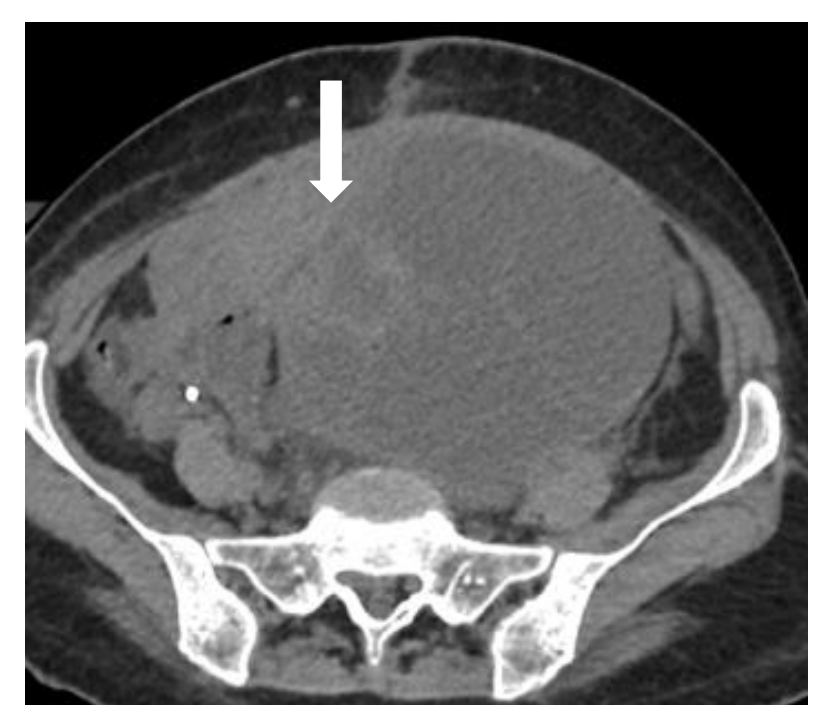
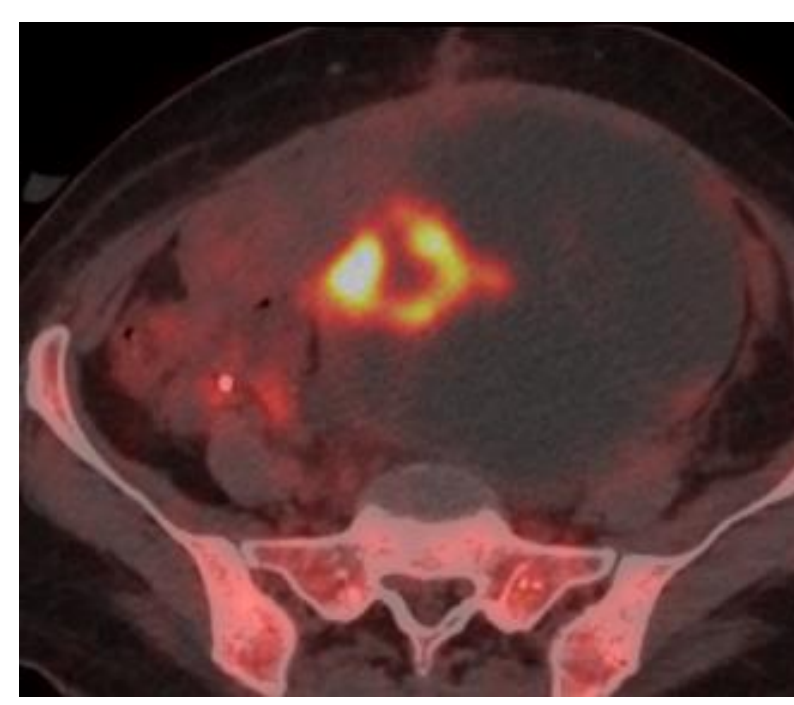
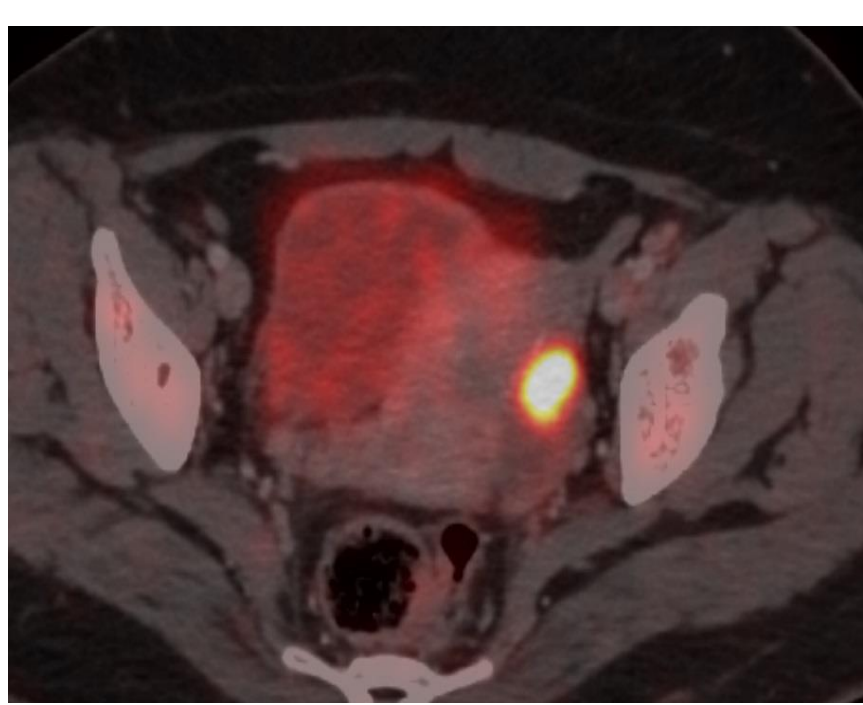


Fig 1. A 57 year female, known case of Carcinoma left breast shows unilateral left predominantly cystic ovarian metastases.

Fig 2. A 56 year female, known case of Primary carcinoma colon presenting with bilateral cystic ovarian metastases.

CONCLUSION -- Ovarian metastases are usually unilateral and cystic in attenuation.

LIMITATION -- Small sample size.

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