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Paraneoplastic Dermatomyositis Associated with Endometrial Carcinoma with Calcinosis Cutis: A Case Report.

Dr. Pooja Guruprasad Pai[1], Dr. Gautam Bhansali[2], Dr. Saurabh Gautam Chhajed[3*], Dr. Madhu Hingorani Dhanani[4], Dr. Satish Khadilkar[5], Dr. Jharna Mahajan[6].

[1]Resident JR2 MD General Medicine Bombay Hospital and Research centre 12, New Marine Lines, Mumbai 400020.
[2]MBBS DNB (Internal Medicine) FCPS FACC FACP Consultant Physician & Intensivist Bombay hospital.
[3]Resident JR3 MD General Medicine, Bombay Hospital and Research centre 12, New Marine Lines, Mumbai 400020.
[4]MD (Medicine), IDCCM Associate Consultant Faculty DNB Family Medicine.
[5]Dean, Bombay Hospital HOD Neurology, Bombay Hospital.
[6]Consultant Neurologist, Bombay Hospital.

Correspondence:
Dr. Pooja Guruprasad Pai
Resident JR2 MD General Medicine Bombay Hospital and Research centre 12, New Marine Lines, Mumbai 400020.

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Abstract

Background: Dermatomyositis as a Possible Paraneoplastic Manifestation in a Patient with Endometrial Carcinoma: A Case Report. ***Objectives:*** To describe the clinical presentation, diagnostic evaluation, treatment response, and malignancy association of dermatomyositis in a patient with a prior history of endometrial carcinoma. ***Materials and Methods:*** A 62-year-old female with a history of endometrial carcinoma treated with total abdominal hysterectomy with bilateral salpingo-oophorectomy followed by chemotherapy and radiotherapy in 2021 presented with progressive proximal muscle weakness and characteristic cutaneous manifestations. Clinical examination, laboratory investigations including muscle enzyme assays, electromyography (EMG), nerve conduction studies (NCS), myositis-specific antibody testing, PET-CT imaging, and histopathological evaluation of a posterior thigh swelling were performed. ***Results:*** The patient exhibited heliotrope-like facial rash, V-sign/shawl-sign rash, Gottron's papules, mechanic's digits, facial skin tightening, and symmetrical proximal muscle weakness. Laboratory evaluation revealed markedly elevated creatine phosphokinase (CPK), aldolase, and lactate dehydrogenase (LDH) levels. EMG and NCS findings were consistent with proximal inflammatory myopathy. Myositis-specific antibody testing demonstrated positivity for Mi-2A and Mi-2B antibodies. PET-CT was undertaken to assess for malignancy recurrence and possible paraneoplastic association. Histopathological examination of the posterior thigh swelling was suggestive of tumor calcinosis/calcinosis cutis. The patient was treated with pulse methylprednisolone followed by oral corticosteroids and mycophenolate mofetil, resulting in significant clinical and biochemical improvement. ***Conclusion:*** Dermatomyositis is a rare autoimmune inflammatory myopathy that may occur as a paraneoplastic syndrome, particularly in adults with a history of malignancy. Early recognition of characteristic clinical features, prompt diagnostic evaluation, and timely initiation of immunosuppressive therapy are essential for improved outcomes. This case underscores the importance of ongoing malignancy surveillance and multidisciplinary management in patients presenting with dermatomyositis.

Keywords: Dermatomyositis; Endometrial Carcinoma; Paraneoplastic Syndrome; Inflammatory Myopathy; Mi-2 Antibodies; Calcinosis Cutis; Autoimmune Disease; Malignancy Surveillance..

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INTRODUCTION

Dermatomyositis is an idiopathic inflammatory myopathy characterized by chronic muscle inflammation and pathognomonic cutaneous manifestations. It affects both adults and children and demonstrates a female predominance. Adult-onset dermatomyositis has a well-established association with malignancy and may present as a paraneoplastic syndrome, particularly in association with ovarian, lung, gastrointestinal, breast, and gynecological malignancies.

The disease typically presents with progressive symmetrical proximal muscle weakness accompanied by characteristic dermatological findings such as heliotrope rash, Gottron's papules, shawl sign, and V-sign rash. Extramuscular involvement may include pulmonary, cardiac, ocular, and gastrointestinal manifestations. Calcinosis cutis is more common in juvenile dermatomyositis but may rarely occur in adults.

The diagnosis is established through a combination of clinical findings, elevated muscle enzymes, electromyographic abnormalities, autoantibody profiling, imaging, and occasionally muscle or skin biopsy. Early diagnosis and prompt immunosuppressive treatment are crucial in preventing long-term morbidity and improving functional outcomes.

We present a case of likely paraneoplastic dermatomyositis in a patient with previously treated endometrial carcinoma, associated with calcinosis cutis and positive myositis-specific antibodies.

CASE PRESENTATION

A 62-year-old female from Rajasthan, a known case of Endometrial Cancer status post total abdominal hysterectomy with bilateral salpingo-oophorectomy followed by three cycles of chemotherapy and radiotherapy in 2021, presented with erythematous pruritic rash predominantly involving the face, neck, and upper chest for one year, with worsening over the preceding one month. She also developed facial puffiness during this period.

The patient complained of restricted mouth opening and progressive facial skin tightening for one year. Her husband additionally noticed frequent blinking over the past month, associated with dryness of eyes.
She also reported gradually progressive symmetrical proximal muscle weakness involving the upper limbs more than the lower limbs, associated with myalgia, leading to difficulty in raising her arms, dressing, hip flexion, and rising from a squatting position.

Additionally, she noticed a swelling measuring approximately 2 × 5 cm over the left posterior thigh for 4–5 months. Prior histopathological examination performed outside was suggestive of tumor calcinosis.

There was no history of fever, weight loss, dysphagia, arthralgia, hematuria, or Raynaud's phenomenon.

Examination

Vital parameters were stable:

- Pulse: 82/min
- Blood pressure: 130/80 mmHg
- SpO_2: 99% on room air

Systemic examination was unremarkable.

Neurological Examination

The patient was conscious and oriented. Cranial nerves were intact. Extraocular movements were full and free. No facial asymmetry, dysarthria, or dysphagia was noted.
Motor examination revealed symmetrical proximal muscle weakness:

Muscle Group	Power
Shoulder abduction	3/5
Shoulder flexion/extension	4-/5
Elbow flexion/extension	4+/5
Wrist flexion/extension	4+/5
Hip flexion	3/5
Hip extension	4-/5
Hip abduction/adduction	4-/5
Knee flexion/extension	4+/5
Ankle flexion/extension	4+/5

- Tone: Normal
- Deep tendon reflexes: 2+ and symmetrical
- Plantars: Bilateral flexor
- Sensory examination: Normal
- Cerebellar signs: Absent
- Meningeal signs: Absent
- Gait: Normal

Cutaneous Findings

Clinical examination revealed:

- Heliotrope-like facial rash
- V-sign/shawl-sign rash
- Gottron's Papules

- Mechanic's digits
- Facial skin tightening

Figure Placeholders
Figure 1. Mechanic's Digits
Figure 2 Facial sign and v sign
Figure 3. Gottron's Papules
Figure 4. Emg Ncv study
Figure 6. PET-CT Imaging

Investigations
Routine laboratory investigations including complete blood count, liver function tests, and renal function tests were within normal limits.
Muscle Enzymes

Investigation	Value
CPK	3376 IU/L
CPK-MB	111.4 IU/L
Aldolase	25.2 U/L
LDH	656 IU/L
ESR	50 mm/hr
CRP	5.2 mg/L

Additional investigations:
- Vitamin D: 12.7 ng/mL
- Vitamin B12: >2000 pg/mL
- Serum ACE: 66.14 U/L

Autoimmune Workup
Considering restricted mouth opening, facial skin tightening, glossitis, and dry eyes, autoimmune evaluation was performed to rule out underlying connective tissue disease.

Test	Result
ANA	Negative
ANA Blot	Negative
ANCA	Negative
Myositis Panel	Mi-2A and Mi-2B Positive

Imaging
Whole-body PET-CT was performed to evaluate for underlying malignancy recurrence and possible paraneoplastic association.

Histopathology
Posterior thigh swelling biopsy was suggestive of tumor calcinosis/calcinosis cutis.
Electrophysiological Study
EMG-NCS findings were suggestive of proximal inflammatory myopathy.

Management
The patient was evaluated jointly by neurology, dermatology, and ophthalmology teams.
She received:
- Intravenous methylprednisolone pulse therapy for 3 days
- Followed by oral prednisolone (Wysolone) 60 mg/day with gradual tapering
- Mycophenolate mofetil initiated as a steroid-sparing agent

Ophthalmological evaluation including Schirmer's test revealed mild tear film deficiency bilaterally without superior limbal dryness or congestion.
Supportive management included:
- Lubricating eye drops

- Vitamin D supplementation
- Physiotherapy
- Strict sun protection
- Regular monitoring of CBC, liver function tests, renal function tests, and CPK levels

The patient demonstrated significant improvement in proximal muscle power on repeat neurological examination.
She was discharged on:

- Prednisolone tapering regimen

Mycophenolate mofetil 250 mg twice daily for 2 weeks followed by 500 mg twice daily after laboratory reassessment

DISCUSSION

Dermatomyositis is associated with malignancy in approximately 15–25% of adult patients. The risk is particularly elevated in elderly patients and in those with dermatomyositis-associated antibodies. Gynecological malignancies including ovarian and endometrial carcinoma have been frequently associated with paraneoplastic dermatomyositis.

The present case is notable for:

- Prior history of endometrial carcinoma
- Characteristic cutaneous manifestations
- Symmetrical proximal muscle weakness
- Elevated muscle enzymes
- Positive Mi-2 antibodies
- Electrophysiological evidence of inflammatory myopathy
- Presence of calcinosis cutis

Calcinosis cutis is uncommon in adult dermatomyositis and is more frequently observed in juvenile disease. Its presence in this patient adds rarity and academic significance to the case.

Mi-2 antibody positivity is generally associated with classic cutaneous manifestations and relatively favorable response to corticosteroid therapy. Early recognition and prompt initiation of immunosuppressive therapy resulted in marked clinical improvement in this patient.

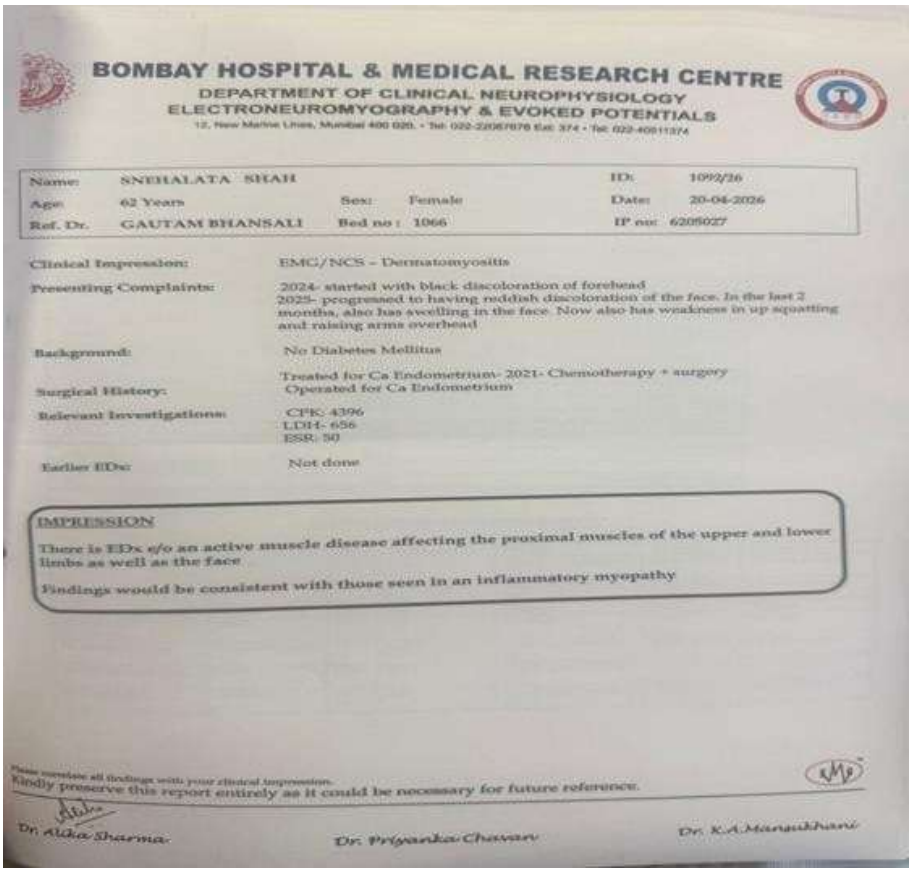
This case underscores the importance of malignancy surveillance in adult-onset dermatomyositis and highlights the need for multidisciplinary management involving neurologists, dermatologists, oncologists, physiotherapists, and ophthalmologists.

CONCLUSION

This case highlights a rare presentation of likely paraneoplastic dermatomyositis associated with previously treated endometrial carcinoma, complicated by calcinosis cutis. Early diagnosis based on characteristic clinical findings, elevated muscle enzymes, antibody positivity, and electrophysiological evidence allowed timely initiation of immunosuppressive therapy with favorable response. Adult patients presenting with dermatomyositis should undergo thorough malignancy screening and long-term surveillance.

LEARNING POINTS

- Adult-onset dermatomyositis has a strong association with malignancy.
- Characteristic skin manifestations may precede muscle weakness.
- Calcinosis cutis in adult dermatomyositis is uncommon.
- Myositis-specific antibodies aid diagnosis and prognostication.
- Early immunosuppressive therapy improves outcomes significantly.
- Multidisciplinary care is essential in management.



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ELECTRONEUROMYOGRAPHY & EVOKED POTENTIALS
12, New Marine Lines, Mumbai 400 020. • Tel: 022-22067676 Ext: 374 • Tel: 022-40811374

Name:	SNEHALATA SHAH			ID:	1092/26
Age:	62 Years	Sex:	Female	Date:	20-04-2026
Ref. Dr.	GAUTAM BHANSALI	Bed no :	1066	IP no:	62050027

Clinical Impression: EMG/NCS – Dermatomyositis

Presenting Complaints: 2024- started with black discoloration of forehead
2025- progressed to having reddish discoloration of the face. In the last 2 months, also has swelling in the face. Now also has weakness in up squatting and raising arms overhead

Background: No Diabetes Mellitus

Surgical History: Treated for Ca Endometrium- 2021- Chemotherapy + surgery
Operated for Ca Endometrium

Relevant Investigations: CPK: 4396
LDH- 656
ESR: 50

Earlier EDs: Not done

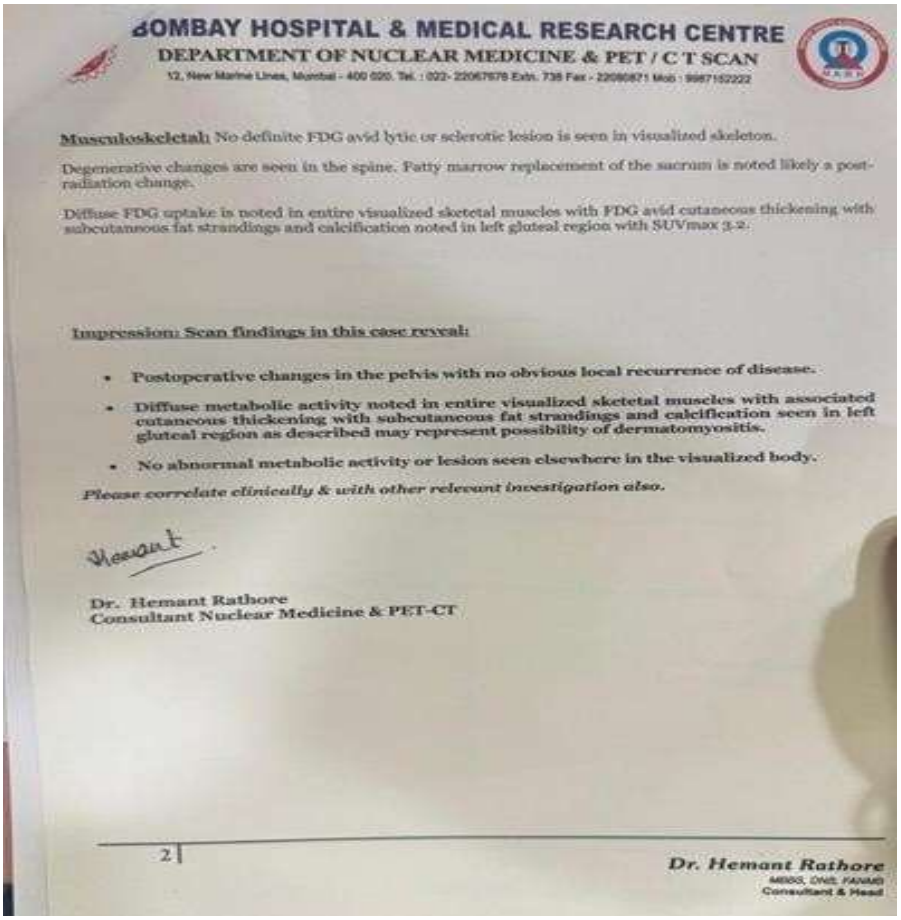
IMPRESSION

There is EDx s/o an active muscle disease affecting the proximal muscles of the upper and lower limbs as well as the face

Findings would be consistent with those seen in an inflammatory myopathy

Please correlate all findings with your clinical impression.
Kindly preserve this report entirely as it could be necessary for future reference.

Dr Alka Sharma. Dr. Priyanka Chavan Dr. K.A.Manjukhani



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DEPARTMENT OF NUCLEAR MEDICINE & PET / C T SCAN
12, New Marine Lines, Mumbai - 400 020. Tel. : 022- 22067676 Extn. 736 Fax - 22080871 Mob : 9987152222

Musculoskeletal: No definite FDG avid lytic or sclerotic lesion is seen in visualized skeleton.

Degenerative changes are seen in the spine. Fatty marrow replacement of the sacrum is noted likely a post-radiation change.

Diffuse FDG uptake is noted in entire visualized skeletal muscles with FDG avid cutaneous thickening with subcutaneous fat strandings and calcification noted in left gluteal region with SUVmax 3.2.

Impression: Scan findings in this case reveal:

- **Postoperative changes in the pelvis with no obvious local recurrence of disease.**
- **Diffuse metabolic activity noted in entire visualized skeletal muscles with associated cutaneous thickening with subcutaneous fat strandings and calcification seen in left gluteal region as described may represent possibility of dermatomyositis.**
- **No abnormal metabolic activity or lesion seen elsewhere in the visualized body.**

Please correlate clinically & with other relevant investigation also.

Hemant

Dr. Hemant Rathore
Consultant Nuclear Medicine & PET-CT

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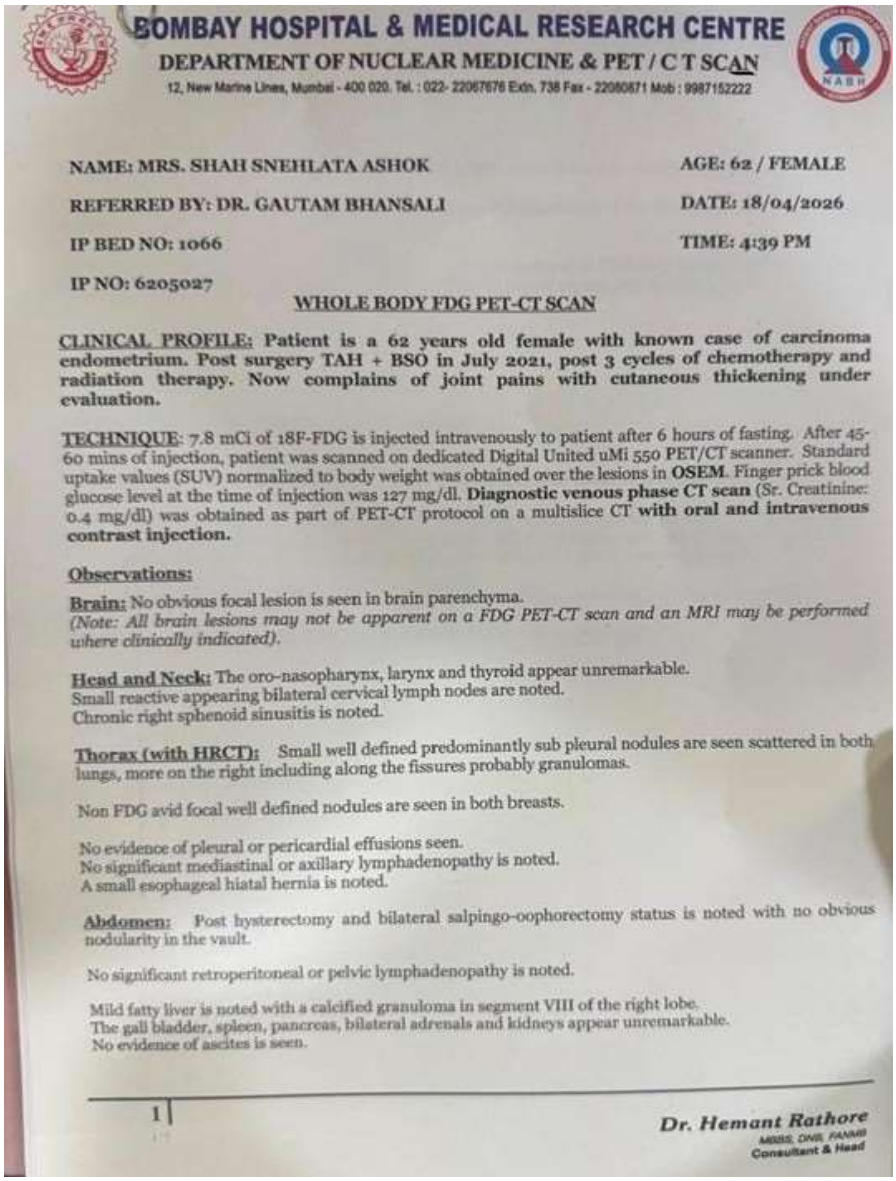
Dr. Hemant Rathore
MBBS, DNB, FANMB
Consultant & Head



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DEPARTMENT OF NUCLEAR MEDICINE & PET / C T SCAN
12, New Marine Lines, Mumbai - 400 020. Tel. : 022- 22067676 Extn. 738 Fax - 22060871 Mob : 9987152222

NAME: MRS. SHAH SNEHLATA ASHOK — AGE: 62 / FEMALE
REFERRED BY: DR. GAUTAM BHANSALI — DATE: 18/04/2026
IP BED NO: 1066 — TIME: 4:39 PM
IP NO: 6205027

WHOLE BODY FDG PET-CT SCAN

CLINICAL PROFILE: Patient is a 62 years old female with known case of carcinoma endometrium. Post surgery TAH + BSO in July 2021, post 3 cycles of chemotherapy and radiation therapy. Now complains of joint pains with cutaneous thickening under evaluation.

TECHNIQUE: 7.8 mCi of 18F-FDG is injected intravenously to patient after 6 hours of fasting. After 45-60 mins of injection, patient was scanned on dedicated Digital United uMi 550 PET/CT scanner. Standard uptake values (SUV) normalized to body weight was obtained over the lesions in **OSEM**. Finger prick blood glucose level at the time of injection was 127 mg/dl. **Diagnostic venous phase CT scan** (Sr. Creatinine: 0.4 mg/dl) was obtained as part of PET-CT protocol on a multislice CT **with oral and intravenous contrast injection.**

Observations:

Brain: No obvious focal lesion is seen in brain parenchyma.
(Note: All brain lesions may not be apparent on a FDG PET-CT scan and an MRI may be performed where clinically indicated).

Head and Neck: The oro-nasopharynx, larynx and thyroid appear unremarkable.
Small reactive appearing bilateral cervical lymph nodes are noted.
Chronic right sphenoid sinusitis is noted.

Thorax (with HRCT): Small well defined predominantly sub pleural nodules are seen scattered in both lungs, more on the right including along the fissures probably granulomas.

Non FDG avid focal well defined nodules are seen in both breasts.

No evidence of pleural or pericardial effusions seen.
No significant mediastinal or axillary lymphadenopathy is noted.
A small esophageal hiatal hernia is noted.

Abdomen: Post hysterectomy and bilateral salpingo-oophorectomy status is noted with no obvious nodularity in the vault.

No significant retroperitoneal or pelvic lymphadenopathy is noted.

Mild fatty liver is noted with a calcified granuloma in segment VIII of the right lobe.
The gall bladder, spleen, pancreas, bilateral adrenals and kidneys appear unremarkable.
No evidence of ascites is seen.

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Dr. Hemant Rathore
MBBS, DNB, FANMB
Consultant & Head

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