ARCHIVES OF HELLENIC MEDICINE: ISSN 11-05-3992

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Medical Imaging Quiz – Case 83

ARCHIVES OF HELLENIC MEDICINE 2025, 42(6):857–858
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2025, 42(6):857–858

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A 75-year-old female patient presented with fatigue and abdominal pain. She referred hypertension and diabetes for 20 years. Laboratory investigation revealed anemia. An abdominal computed tomography (CT) was performed and revealed pathological findings not compatible with her symptoms (figures 1, 2).

Comments

Teratomas are germ cell tumors that arise from ectopic pluripotent stem cells that fail to migrate from the yolk sac endoderm to the urogenital ridge during embryogenesis. By definition, they contain elements from all three embryological layers: endoderm, mesoderm and ectoderm, although frequently, elements from only two layers are apparent.[1–4]

Teratomas need to be distinguished from monodermal teratomas (those arising from only a single layer), epidermoid cysts, which are of ectodermal origin and composed purely of keratinized squamous epithelium, and dermoid cysts, which are also of ectodermal origin but also contain secondary skin structures such as hair and sebaceous glands. The latter term is also sometimes (confusingly) used in the pelvis to refer to mature cystic teratomas.

Teratomas range from benign, mature, well-differentiated cystic lesions to immature, poorly-differentiated lesions with solid components and malignant transformation. They arise from multiple embryonal cell lines and as a result, they can contain a large variety of tissue types, essentially soft tissue from any part of the body, including fat, cystic spaces due to mucous production from bronchial or gastrointestinal mucosa or other exocrine products, various endocrine organs, which can sometimes be functional, calcification including teeth, brain and neural tissue. Occasionally, mature teratomas contain elements that undergo malignant trans-

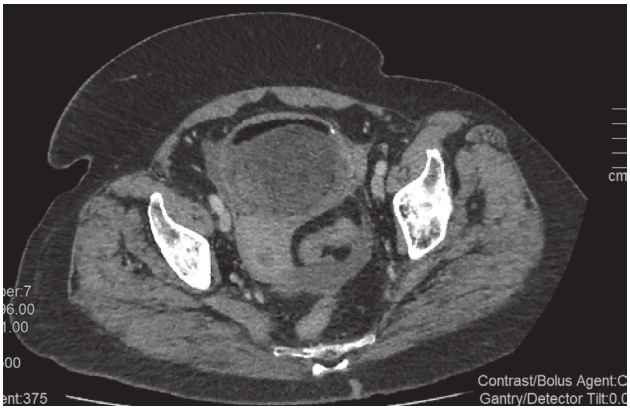

Figure 1. Axial computed tomography (CT) image demonstrating a well-defined heterogeneous mass with fat, soft tissue, and calcified components, consistent with a mature (benign) teratoma.

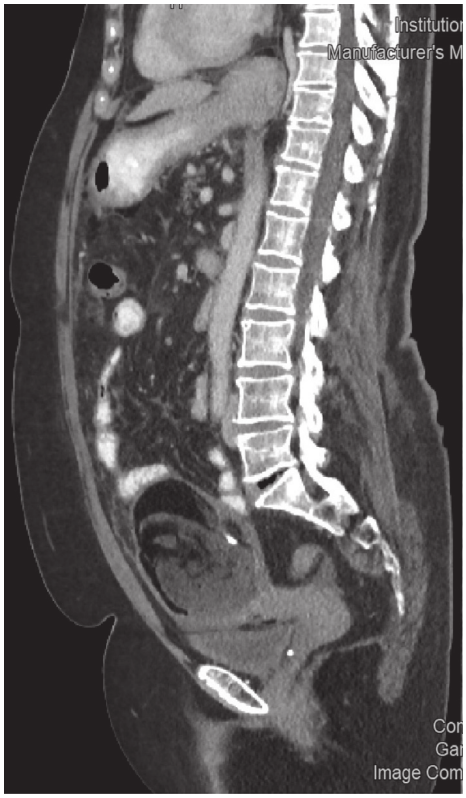

Figure 2. Sagittal contrast-enhanced computed tomography (CT) image showing a well-demarcated heterogeneous mass in the presacral region, containing fat, soft tissue, and calcified components-findings consistent with a sacrococcygeal mature teratoma.

formation, most commonly squamous components. Additionally, rupture of cystic spaces can result in inflammatory reaction and adhesions/scarring and hemorrhage. They are located in a variety of locations, including intracranial teratoma, congenital cervical teratoma, spinal teratoma, sacrococcygeal teratoma, head and neck teratomas, mediastinal teratoma (account for 27% of all teratomas in adults and 4–13% of all teratomas in children), retroperitoneal teratoma, mature ovarian teratoma, testicular teratoma.

References

1. WESTHOFF C, PIKE M, VESSEY M. Benign ovarian teratomas: A population-based case-control study. *Br J Cancer* 1988, 58:93–98
2. PETERSON CM, BUCKLEY C, HOLLEY S, MENIAS CO. Teratomas: A multimodality review. *Curr Probl Diagn Radiol* 2012, 41:210–219
3. LAX SF, BORCZUK AC, MOREIRA AL, ULBRIGHT TM, RODEN AC, STRÖBEL P. Teratoma of the mediastinum. In: WHO classification of tumours editorial board (ed) *Thoracic tumours.* 5th ed. International Agency for Research on Cancer, Lyon, 2025
4. SABA L, GUERRIERO S, SULCIS R, VIRGILIO B, MELIS G, MALLARINI G. Mature and immature ovarian teratomas: CT, US and MR imaging characteristics. *Eur J Radiol* 2009, 72:454–463

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