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Title of the presentation:

"Role of Imaging Modalities in the Assessment of a case of Multiple Hydatid Cysts"

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Introduction/ Review of Literature:

Hydatid disease, caused by the Echinococcus species, presents significant diagnostic and therapeutic challenges, particularly when multiple cysts are involved. Imaging modalities play a crucial role in the assessment and management of this condition, allowing for accurate diagnosis, monitoring and evaluation of treatment efficacy.

1. Ultrasound (US)

Ultrasound is often the first-line imaging modality used for the diagnosis of hydatid disease due to its accessibility, cost-effectiveness and lack of radiation exposure. Ultrasound can effectively characterize cysts and differentiate between active and inactive lesions. Multiple studies emphasize its role in assessing cyst morphology, size, and location, as well as in detecting complications such as rupture or infection.

2. Computed Tomography (CT)

CT imaging provides a more detailed assessment of hydatid cysts, particularly in complex cases with multiple lesions. It offers excellent visualization of cyst characteristics, such as wall thickness and the presence of daughter cysts. The ability to perform three-dimensional reconstructions enhances surgical planning and post-operative assessments.

Aims/ Objectives:

- **To Evaluate Diagnostic Accuracy -** Assess the accuracy and reliability of various imaging modalities (ultrasound, CT) ability to differentiate between active and inactive lesions.
- **To Characterize Cyst Morphology -** Analyse the role of imaging techniques in the understanding of disease progression and potential complications.
- **To Assess Complications -** Investigate the effectiveness of imaging modalities in identifying complications associated with multiple hydatid cysts.
- **To Guide Treatment Planning -** Determine how imaging findings influence treatment decisions, including surgical planning and the choice of percutaneous interventions, by providing detailed anatomical information.
- **To Monitor Treatment Response -** Explore the utility of imaging in monitoring the response to treatment (medical or surgical), including the detection of residual or recurrent disease in patients with multiple hydatid cysts.
- **To Compare Imaging Modalities -** Compare the strengths and limitations of different imaging modalities in the assessment of hydatid cysts, identifying the most effective approaches for various clinical scenarios.
- **To Enhance Patient Outcomes -** Aim to identify how improved imaging strategies can contribute to better clinical outcomes, reducing morbidity associated with hydatid disease through timely diagnosis and management.

These aims and objectives will guide the investigation into the critical role of imaging in managing multiple hydatid cysts, ultimately enhancing understanding and improving patient care.

Methodology:

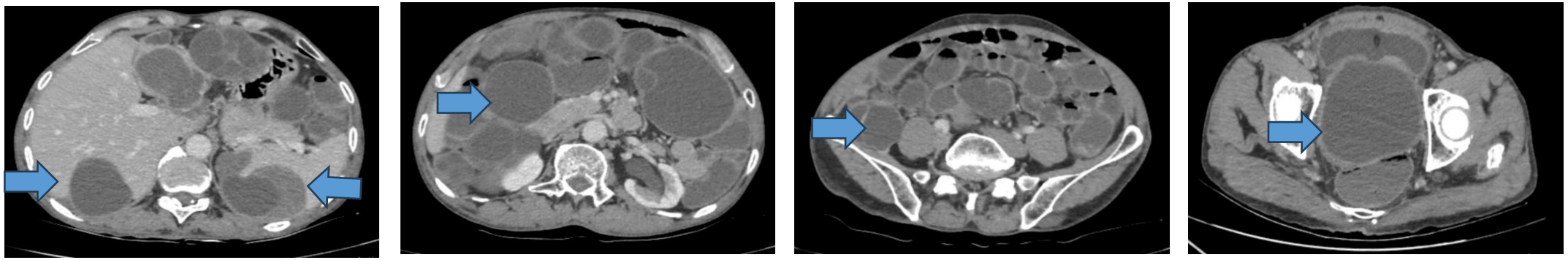
A 54-year-old male patient presented to the emergency ward with abdominal pain and was diagnosed with multiple hydatid cysts. Imaging studies—including ultrasound, computed tomography (CT) and postoperative findings—were reviewed to assess their diagnostic accuracy, cyst characterization ability, and detection of complications. Each modality was evaluated based on sensitivity, specificity, and overall contribution to clinical decision-making.

Results:

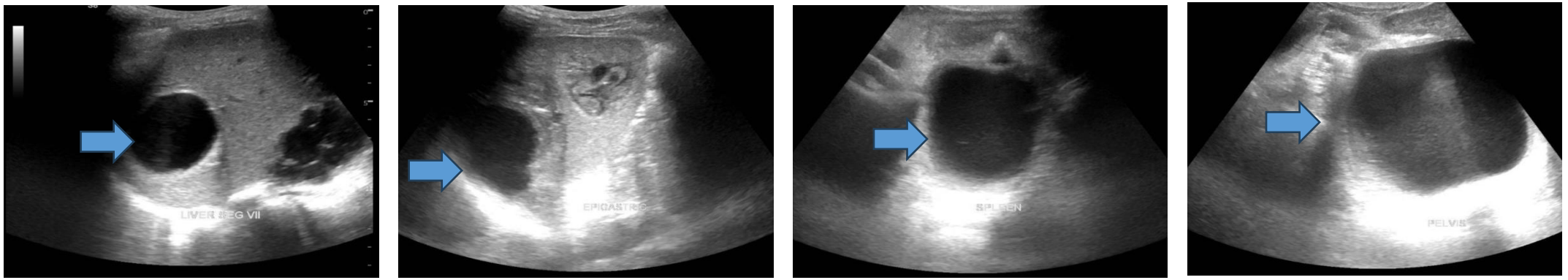
Key findings demonstrated that:

- **Ultrasound** is highly effective for initial detection and classification of cysts, particularly in the liver, providing valuable information on cyst wall thickness, internal septations, and calcification.
- **Computed Tomography** offers superior spatial resolution, facilitating detailed assessment of cyst location, size, potential rupture, and adjacent organ involvement.

Representative images:



CT - Multiple variable sized well defined peripherally enhancing hypodense lesions in intrahepatic, splenic parenchymal, intraperitoneal & extraperitoneal and pelvic regions.



USG - Multiple variable sized well defined anechoic lesions in intrahepatic, splenic parenchymal, intraperitoneal & extraperitoneal and pelvic regions.

These images shows -

- Intra operative findings
- Post operative findings &
- Histopathological findings.

Conclusion:

- Each imaging modality has specific strengths in assessing multiple hydatid cysts.
- Ultrasound is cost-effective and accessible.
- CT provides advanced insights, especially in complex cases.
- An integrated approach using multiple modalities can enhance diagnostic accuracy, guide treatment and improve patient outcomes.

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