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RESEARCH ARTICLE

SECONDARY PELVIC HYDATIDOSIS IN MULTIVISCERAL CYSTIC ECHINOCOCCOSIS A CASE REPORT

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Abstract

Background:- Cystic echinococcosis is endemic in Morocco. Pelvic involvement is rare and most often occurs as a secondary or multivisceral manifestation.

Case presentation:- A 38-year-old multiparous woman (G5P5) living in a rural area had undergone two operations for hepatic hydatid disease 28 years earlier. Pulmonary, hepatic, splenic and pelvic lesions were identified. Pelvic ultrasound on 1 March 2022 and MRI on 7 March 2022 demonstrated two active multivesicular cystic masses, classified as Gharbi type III and morphologically corresponding to WHO-IWGE CE2. Hydatid serology was positive. Albendazole was administered before and after single-stage surgery for the hepatic, splenic and pelvic lesions; the reported total duration of medical therapy was two years. The pulmonary lesion was referred to thoracic surgery. Clinical and radiological outcome was favourable.

Conclusion:-Cystic echinococcosis should be considered in the differential diagnosis of pelvic cystic masses in endemic areas, particularly when other visceral sites are involved. Management should combine multidisciplinary assessment, antiparasitic therapy, site-adapted surgery and prolonged follow-up.

Introduction:-

Cystic echinococcosis is a zoonosis caused by the larval stage of Echinococcus granulosus sensu lato. The liver and lungs are the most frequently involved organs, whereas splenic, peritoneal and pelvic sites are uncommon [1–3].

Pelvic disease may be primary or secondary to dissemination after spontaneous, traumatic or operative rupture of a visceral cyst. Its pseudotumoral presentation may mimic ovarian or peritoneal disease. We report a secondary pelvic localization occurring in multivisceral cystic echinococcosis.

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Case presentation:-
A 38-year-old married woman, G5P5, living in a rural area had undergone two previous operations for hepatic hydatid disease 28 years earlier.Thoracoabdominopelvic computed tomography on 26 August 2020 showed two large pulmonary cystic lesions containing daughter vesicles, including a 105 × 73 mm right lower-lobe lesion and an 86 × 64 mm intersplenodiaphragmatic lesion.

Several hepatic cysts, one of which was calcified, and two right pelvic lesions measuring 74 × 67 mm and 72 × 52 mm were also described.Pelvic ultrasound on 1 March 2022 showed a right parauterine solid-cystic mass. Pelvic MRI on 7 March 2022 demonstrated a 42 × 40 × 45 mm right parauterine mass and an 82 × 73 × 86 mm retro-uterine mass. Their multivesicular architecture, numerous daughter vesicles and detached membrane in the parauterine lesion were diagnostic imaging features of active cystic echinococcosis. Both lesions were classified as Gharbi type III and were morphologically consistent with WHO-IWGE CE2 cysts. Hepatic and splenic involvement was also present.Hydatid serology was positive. Haemoglobin was 13.5 g/dL, white-cell count 6,800/mm³, platelet count 171,000/mm³ and liver biochemical tests were normal.

Therapeutic management:-
The strategy was defined jointly with the visceral surgery team, taking into account the multivisceral burden, lesion size, multivesicular stage and anatomical relationships. Albendazole was started before surgery. In this setting, the aim of preoperative therapy was to reduce protoscolex viability and the risk of dissemination should inadvertent cyst opening occur. The exact dose and preoperative duration were not available in the supplied documents and therefore cannot be presented as patient-specific data.

The hepatic, splenic and pelvic lesions were treated during a single abdominal and pelvic operation. The essential principles of safe hydatid surgery include controlled exposure, protection of the operative field, atraumatic handling and avoidance of cyst rupture or fluid leakage in order to limit anaphylaxis and secondary peritoneal seeding. When anatomy permits, complete treatment should be balanced against preservation of adjacent organs. In the pelvis, special attention is required for the ureters, bladder, rectum, uterus, adnexa and pelvic vessels. As the detailed operative report was unavailable, the resection technique, use of a protoscolicidal agent and conservative or radical nature of the procedure are not attributed to this patient.

Albendazole was continued after surgery, with a reported total medical-treatment duration of two years. Prolonged therapy ordinarily requires regular clinical and laboratory monitoring, particularly complete blood count and liver enzymes, with reassessment if cytolysis, leukopenia or intolerance develops. The exact monitoring schedule was not documented in the available records.

The pulmonary lesion was not included in the abdominal and pelvic operation. It was referred to thoracic surgery for separate assessment of indication, sequencing and lung-adapted technique. This illustrates the value of multidisciplinary, staged management when simultaneous treatment of all sites would increase morbidity. The reported clinical and radiological outcome after abdominal and pelvic treatment was favourable.

Discussion:-

Rarity and probable mechanism:-
The distinctive feature of this case is the exceptional association of two pelvic localizations with pulmonary, hepatic and splenic disease. Pelvic hydatidosis may be primary after passage through the hepatic and pulmonary filters, but is more often secondary to haematogenous or peritoneal dissemination. In this patient, two hepatic operations performed 28 years earlier make remote secondary seeding plausible, possibly through operative leakage or subsequent recurrence. The long interval is compatible with slow cyst growth, but the available data cannot establish the exact mechanism [2–4].

Diagnostic contribution of imaging:-
Clinical manifestations of pelvic cysts are non-specific and mainly reflect mass effect. Differential diagnoses include ovarian cystadenoma, teratoma, endometrioma, tubo-ovarian abscess, peritoneal collection and retroperitoneal tumour. In an endemic setting, daughter vesicles, detached membranes or hydatid sand should suggest echinococcosis. Ultrasound is the initial examination; CT establishes thoracoabdominopelvic extent and detects calcification; MRI more accurately depicts multivesicular content and relationships with pelvic organs. The multivesicular Gharbi type III pattern corresponds morphologically to an active WHO-IWGE CE2 cyst. Concordance

of these signs with other visceral lesions made the diagnosis highly probable. Positive serology provided supportive evidence but is neither an independent proof nor a reliable stand-alone marker of activity [1–3].

Selection of therapeutic strategy:-
Management is not determined by cyst diameter alone. It should integrate the involved organ, ultrasound stage, activity or complications, symptoms, accessibility, rupture risk, relationship to critical structures, previous therapy and local expertise [1,2]. Watch-and-wait may be appropriate for selected inactive lesions, whereas drug therapy alone or percutaneous techniques apply to selected situations. By contrast, a large or complex multivesicular mass abutting important pelvic organs frequently requires surgical discussion. Puncture–aspiration–injection–reaspiration should not be applied automatically to multivesicular cysts containing numerous daughter vesicles and may be unsuitable when access carries a substantial risk of leakage or visceral injury [1,2].

Surgical objectives and precautions:-
Surgery has three main objectives: treatment of clinically relevant cysts, prevention of mechanical or infectious complications and avoidance of further dissemination. The choice between complete resection, pericystectomy and a conservative procedure depends on whether safe control can be achieved without unnecessary organ loss. In a woman of reproductive age, preservation of the uterus and adnexa is desirable whenever technically safe; this general principle does not establish which procedure was performed in the present case. Isolation of the field, gentle manipulation, controlled management of cyst contents and judicious protoscolicidal precautions according to local protocol are essential. Spillage may cause immediate anaphylaxis and later secondary peritoneal hydatidosis [1,2,5].

Role of albendazole:-
Albendazole is an important adjunct in multiple, disseminated, recurrent or surgically treated disease. Given perioperatively, it aims to reduce parasite viability and recurrence after microscopic contamination. Dosing is ordinarily weight- and context-adjusted and should not be reconstructed retrospectively when the prescription is unavailable. Hepatotoxicity and bone-marrow suppression, although uncommon, justify complete blood count and liver biochemical testing before and during treatment. Duration should be individualized; the two years reported here probably reflect multivisceral complexity but should not be interpreted as a universal requirement for pelvic hydatidosis [1–3].

Multivisceral sequencing and follow-up:-
In multivisceral disease, treatment order is guided by symptoms, complication risk and the feasibility of an acceptable combined procedure. Single-stage treatment of hepatic, splenic and pelvic disease reduced the number of abdominal operations, whereas the pulmonary lesion was assigned to a thoracic team. Follow-up should be prolonged because recurrence may occur late. It combines clinical assessment, comparative imaging of every initially involved site and laboratory monitoring during albendazole therapy. Serology may remain positive despite morphological control and should not alone dictate continued treatment [1–3].

Strengths and limitations:-
This case highlights the value of comprehensive staging and the complementary roles of ultrasound, CT and MRI in an atypical pelvic mass. Its main limitations are the retrospective single-case design, lack of a detailed operative report, unavailable exact albendazole dose and absence of patient-specific histopathology images. The displayed histological image is therefore explicitly illustrative and literature-derived; it must not be interpreted as individual pathological confirmation.

Key learning points:-
Pelvic cystic echinococcosis should be included in the differential diagnosis of a multivesicular pelvic mass in patients from endemic areas, especially when hepatic, splenic or pulmonary cysts coexist.Cross-sectional imaging is essential not only for diagnosis but also for mapping the relationships of pelvic cysts to the urinary, digestive, genital and vascular structures before intervention.Management of multivisceral disease should be individualized in a multidisciplinary setting. Surgery requires meticulous prevention of spillage, albendazole requires hepatic and haematological monitoring, and surveillance must include every initially involved organ.

Conclusion:-
Secondary pelvic hydatidosis is rare but should be considered in any pelvic cystic mass in an endemic setting. Associated pulmonary, hepatic and splenic lesions warrant comprehensive staging. A multidisciplinary strategy

combining albendazole, site-adapted surgery and prolonged surveillance may reduce the risks of dissemination and recurrence.

TIMELINE OF MANAGEMENT

Date or period	Step	Main findings
26 August 2020	CT	Pulmonary, hepatic, intersplenodiaphragmatic and pelvic lesions.
1 March 2022	Ultrasound	Right parauterine solid-cystic mass.
7 March 2022	Pelvic MRI	Two active multivesicular Gharbi III / WHO CE2 pelvic masses.
Perioperative period	Albendazole	Treatment before and after surgery; reported total duration of two years.
Operation	Visceral surgery	Simultaneous treatment of hepatic, splenic and pelvic lesions.
Follow-up	Outcome	Favourable outcome; thoracic referral for pulmonary involvement.

CLINICAL IMAGING

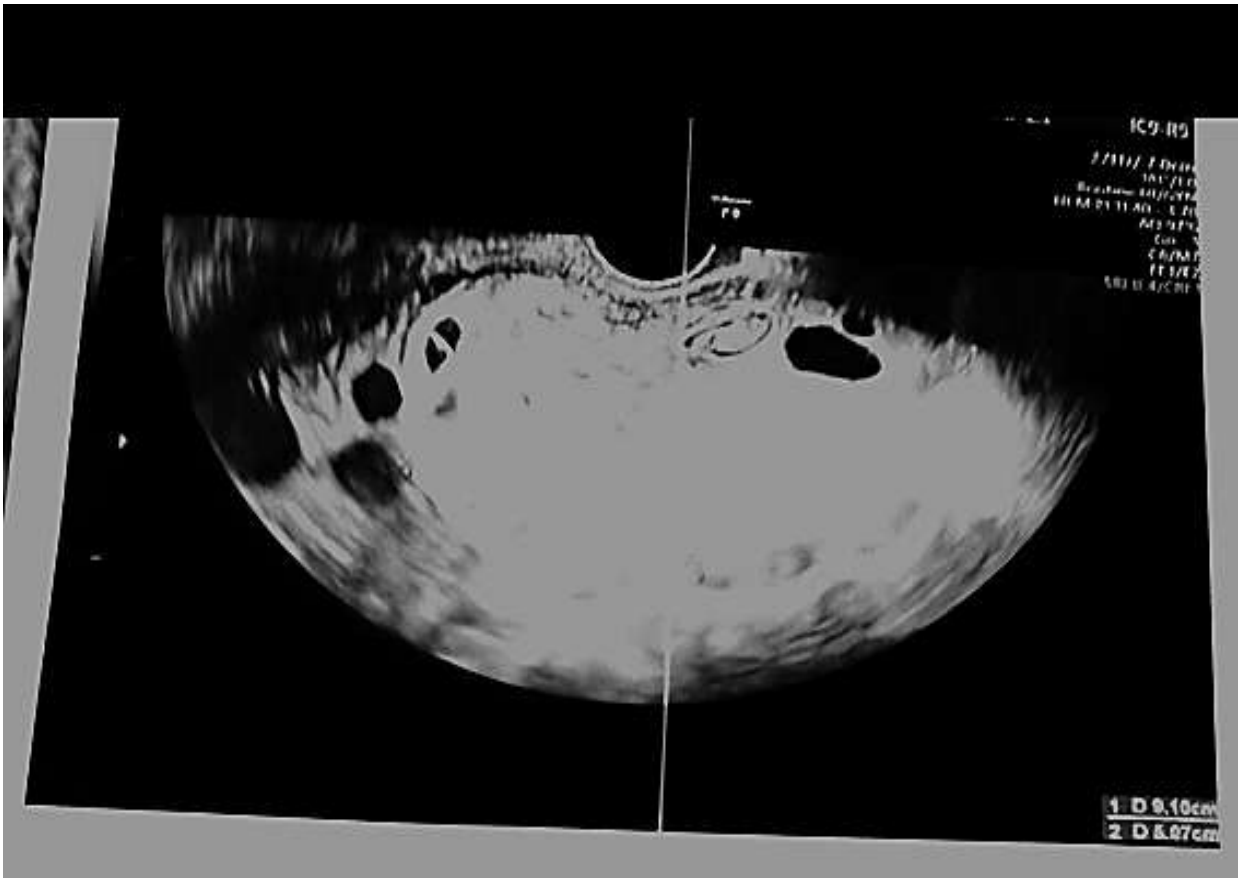

Figure 1 A. Pelvic ultrasound showing a well-defined right parauterine solid-cystic mass.

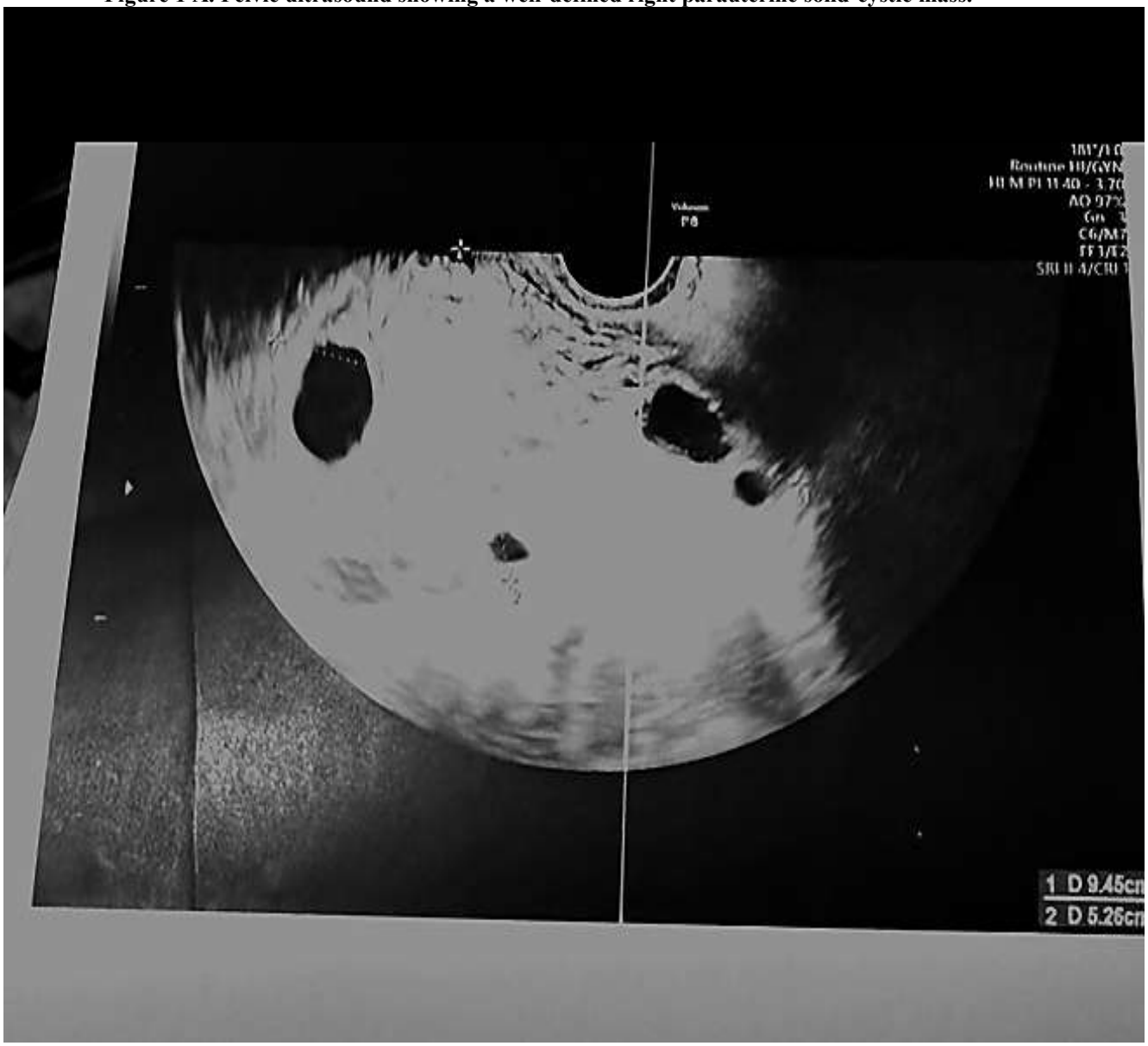

Figure 1B. Second pelvic ultrasound view showing the cystic component and internal architecture of the right parauterine mass.

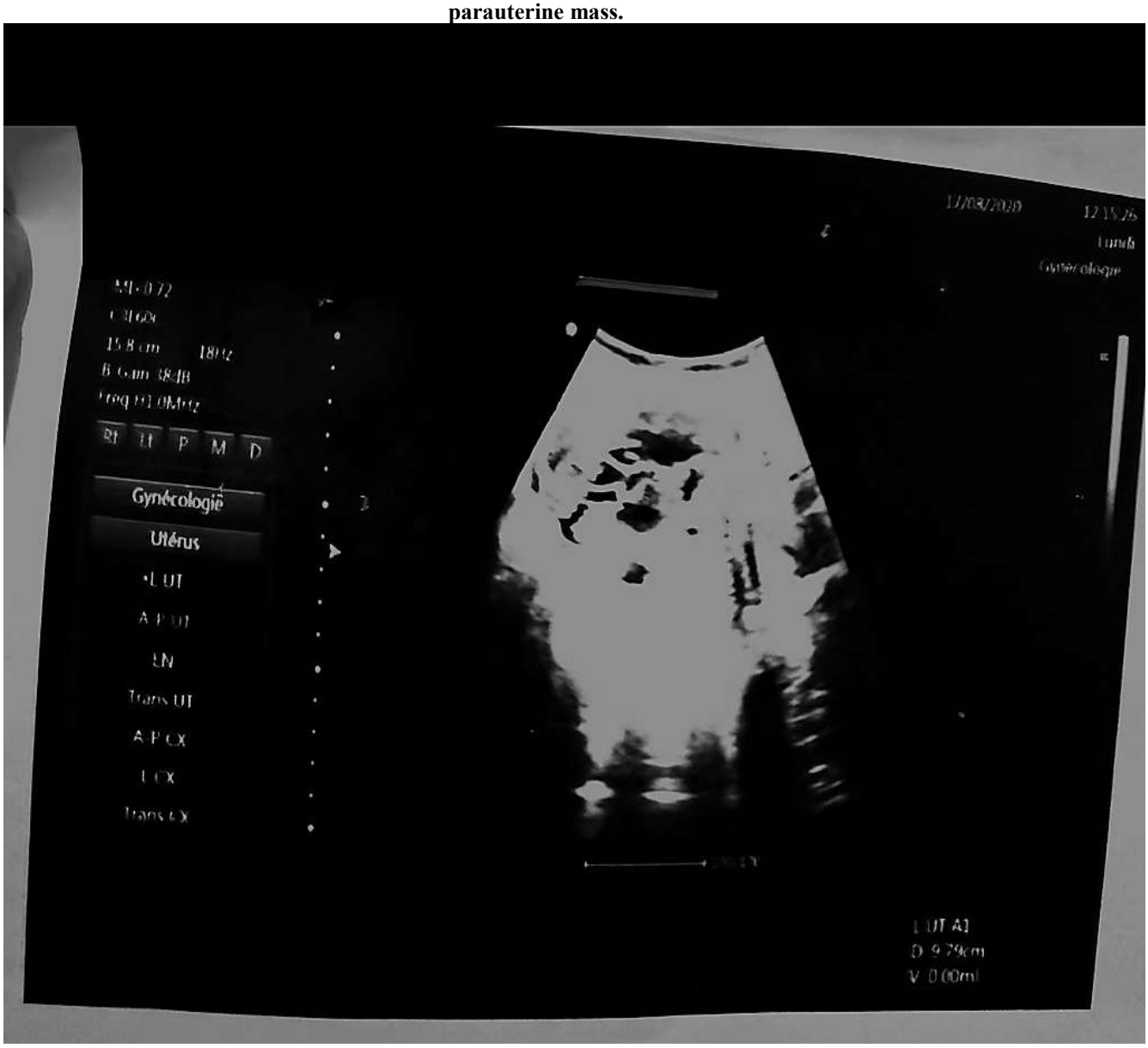

Figure 1C. Pelvic ultrasound showing a multivesicular cystic mass containing multiple daughter vesicles with a rosette-like appearance, consistent with an active pelvic hydatid cyst (Gharbi type III; WHO-IWGE CE2).

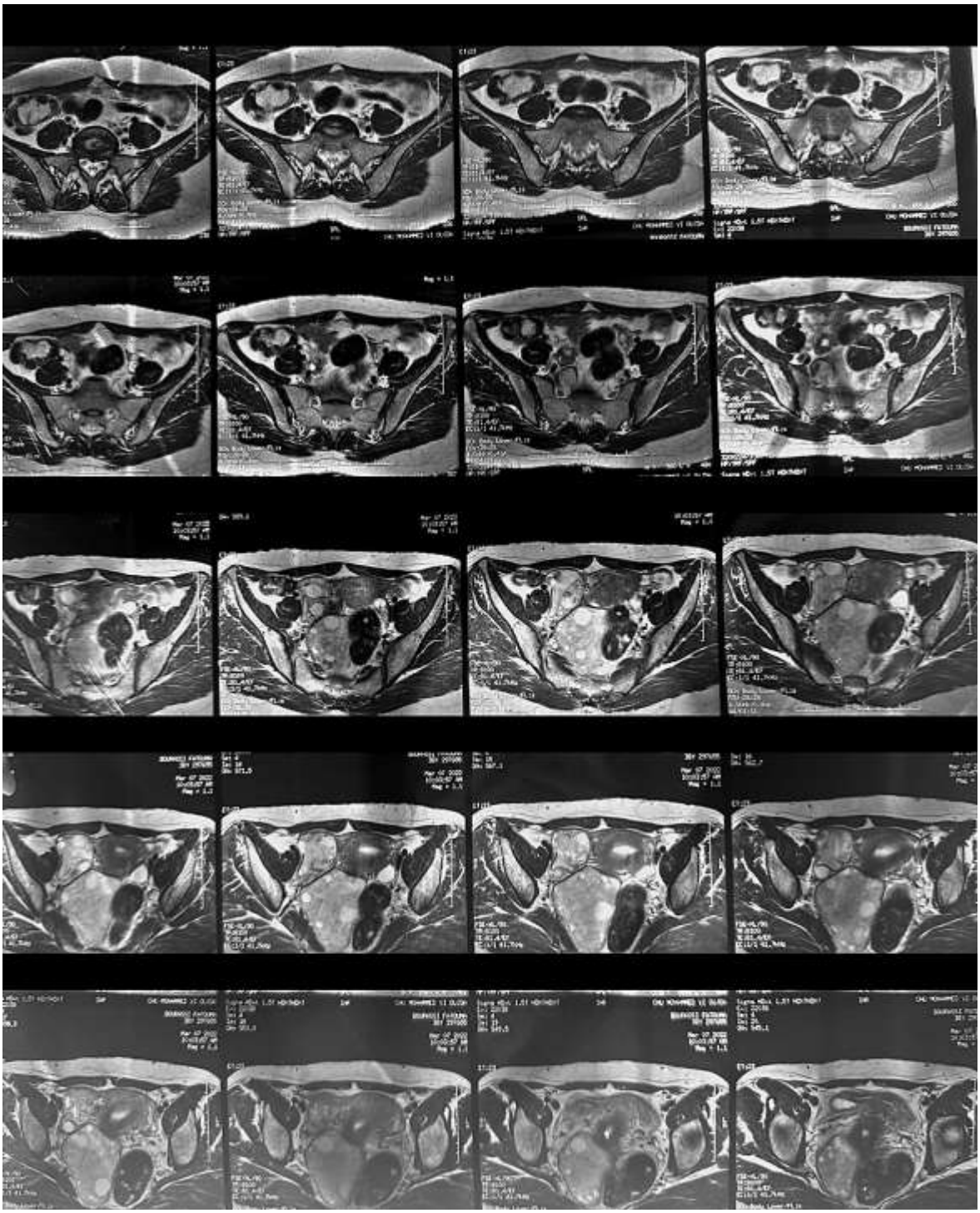

Figure 2A. Axial pelvic MRI dated 7 March 2022 showing two well-circumscribed multivesicular cystic lesions: a right parauterine mass measuring 42 × 40 × 45 mm and a larger retro-uterine mass measuring 82 × 73 × 86 mm. The numerous daughter vesicles produce a characteristic cyst-within-a-cyst appearance, consistent with active pelvic hydatid cysts (Gharbi type III; WHO-IWGE CE2).

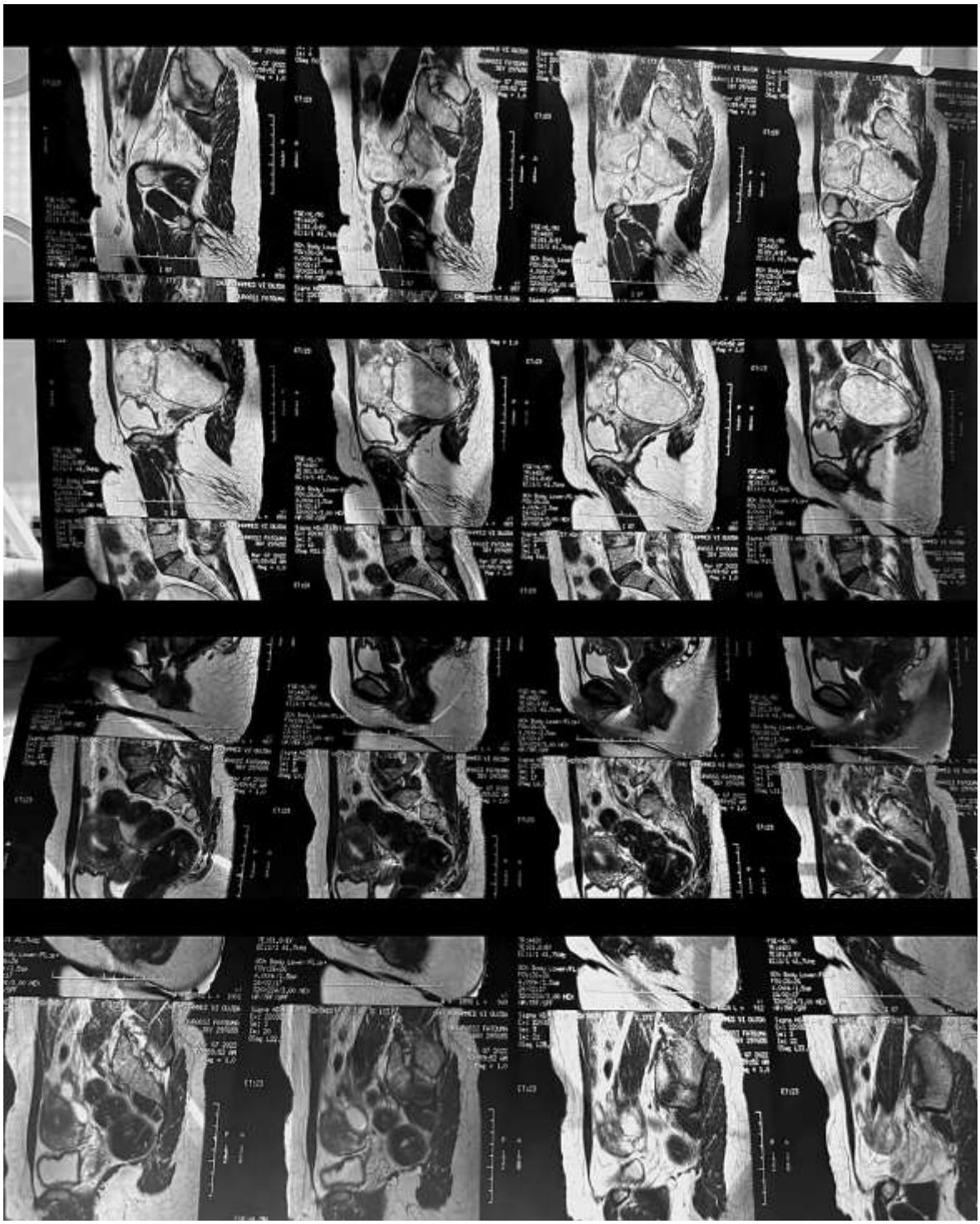

Figure 2 B. Sagittal pelvic MRI dated 7 March 2022 demonstrating the craniocaudal extent and retro-uterine location of the larger multivesicular lesion, as well as its relationships with adjacent pelvic organs. A detached internal membrane is visible within the smaller right parauterine cyst, further supporting the diagnosis of active pelvic cystic echinococcosis.

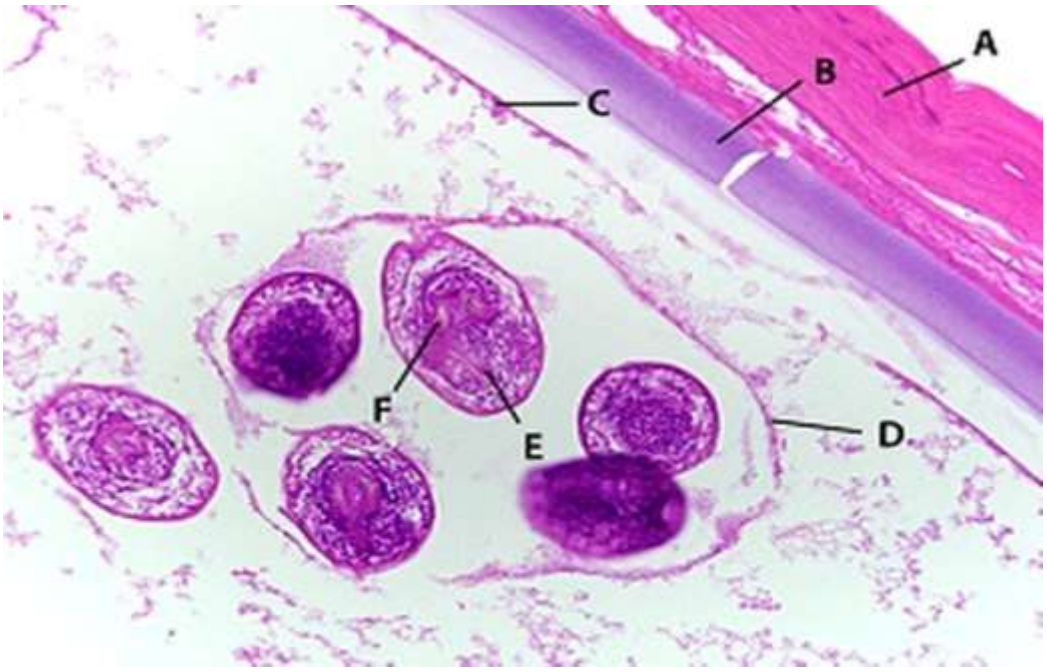

Figure 3. Illustrative histopathology image from the literature and not from the patient: H&E-stained section of an Echinococcus granulosus cyst showing host tissue, the acellular laminated layer, the germinal layer and a brood capsule containing protoscolices. Source: CDC DPDx [6].

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