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Short Report

Hepatic Macronodular Tuberculosis*

Ilginc YORULMAZ[1]
Hakan UNCU[2]
Yalcın AKER[2]
Aslan SAKARYA[2]
Aydın ISISAG[3]

Departments of [1]Radiology, [2]General Surgery and [3]Pathology, Faculty of Medicine, Celal Bayar University, Manisa–Turkey

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Tuberculous involvement of the liver is usually a diffuse process, associated with miliary tuberculosis. Miliary hepatic tuberculosis occurs much more commonly than the rare macronodular variety. In the macronodular variety, single or multiple large nodular lesions or abscess cavities develop in the liver and/or spleen (1, 2). On the basis of imaging examinations alone, these lesions are virtually indistinguishable from many other focal lesions of the liver, such as hepatocellular carcinoma, metastatic deposits, Hodgkin's disease, infected hydatic cysts, pyogenic abscesses, etc. and pathologic examination is necessary for diagnosis, especially in patients who have a co-existing malignancy.

A 35-year-old female patient underwent surgery for a solid mass in the right ovary and hydropic left tuba uterina. Total abdominal hysterectomy and bilateral salpingo-oopherectomy was performed after consulting the pathologist per operatively. A histopathological examination revealed a granulosa cell tumor and tuberculous salpingitis. An abdominopelvic ultrasonographic examination identified no other pathology. The patient was discharged after being prescribed appropriate antituberculous agents. An ultrasonographic examination performed after nine months revealed a heterogenous lesion, 4.8 cm in diameter, in the medial segment of the left lobe of the liver (Figure 1). The mass was further evaluated using magnetic resonance imaging (MRI). On T1-weighted images, the lesion was hypointense compared to the liver parenchyma (Figure 2a); it showed strong and heterogenous enhancement following intravenous Gd-DTPA injection. The periphery of the mass enhanced more

Figure 1. Ultrasonographic examination performed nine months after the gynecologic operation revealed a heterogenous lesion 4.8 cm in diameter in the medial segment of the left obe of the liver (between marks).

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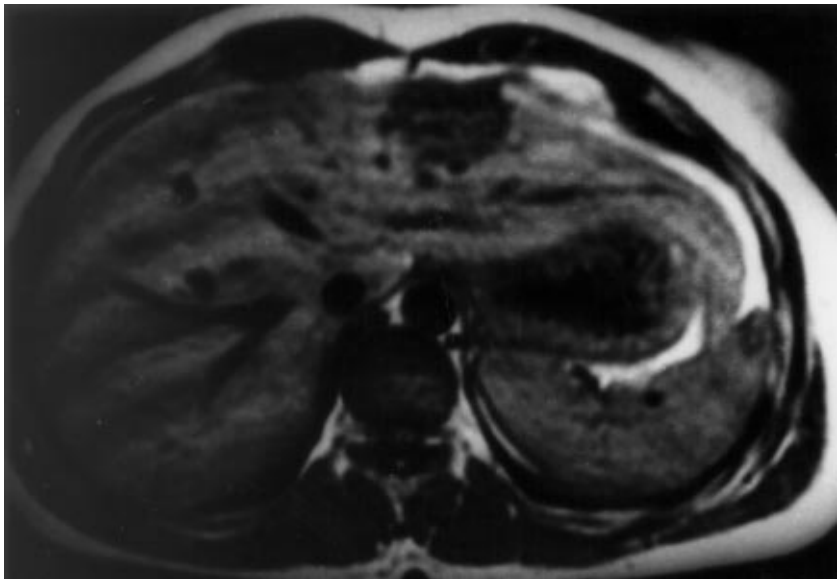

Figure 2a. On a T1-weighted axial magnetic resonance image (TR/TE=665/20 msec), the lesion was hypointense compared to the liver parenchyma.

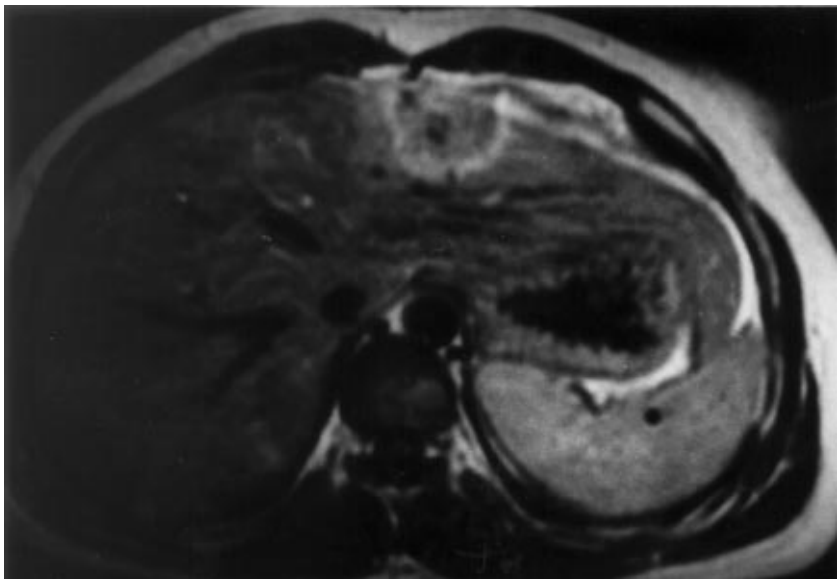

Figure 2b. The mass showed strong and heterogenous enhancement following intravenous Gd-DTPA injection.

than the central portion, where a few "speckles" of hypointense areas still persisted after an injection of Gd-DTPA (Figure 2b). On T2-weighted images, the lesion was markedly hyperintense compared to the liver parenchyma (Figure 3). The mass appeared to exhibit features more of like malignant tumors on MRI examination.

After considering the potential risk of malignancy of granulosa cell tumors of the ovary, surgical intervention was planned for definite diagnosis and treatment. The lesion was totally excised; no other pathologic condition was detected in the abdomen. The histopathological diagnosis was hepatic macronodular tuberculoma.

Tuberculous involvement of the liver is usually of the miliary variety. Localized tuberculosis of the liver producing a macronodular tuberculoma or an abscess is unusual, possibly because the bacilli are less viable in the liver and spleen than in the lungs. Lesions more than 3 centimeters in diameter are much rarer. Slight female preponderance is observed in the reported cases (1).

The hepatic lesion in our patient apparently originated from the tuba uterina since no focus was identified in the

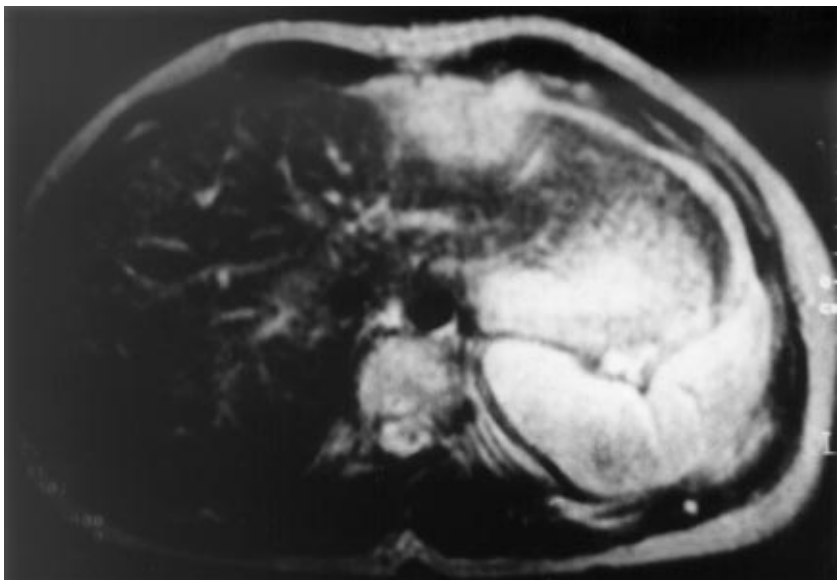

Figure 3. On a T2-weighted axial magnetic resonance image (TR/TE= 2000/90 msec), the lesion was markedly hyperintense compared to the liver parenchyma. This signal intensity pattern is not consistent with reported tuberculoma cases in the literature, which commonly exhibited a low signal on both T1-and T2-weighted sequences (4).

lungs. After the gynecologic operation, the patient was prescribed appropriate antituberculous agents which did not seem to hinder the formation of such a large focal lesion in the liver in such a short period of time. We think this is also striking in this rare condition.

Ultrasonographic and computed tomographic examinations exhibit rather nonspecific features in hepatosplenic macronodular tuberculomas (1-3). A few lesions have been studied using magnetic resonance imaging, and these commonly showed low signals on both T1- and T2-weighted sequences. The authors observed that hypointensity of the masses on T1-weighted sequences persisted on T2-weighted images and concluded that this feature may be a differential clue for tuberculomas (4).

In our patient, however, the mass was markedly hyperintense on T2-weighted sequences. Moreover, it showed strong and heterogenous enhancement following intravenous Gd-DTPA injection. MRI examination did not seem to prove useful in the preoperative diagnosis possibly because the various stages in the evolution of the disease process may not allow a typical imaging feature to be observed in every case. The relatively rapid growth of the lesion in spite of appropriate antituberculous therapy may also have contributed to the features on the MRI examination which favored a metastatic lesion rather than a benign one.

On the basis of imaging examinations alone, localized tuberculous lesion are virtually indistinguishable from many other focal lesions of the liver and magnetic resonance imaging examination is no exception. Patients who have a co-existing malignancy are more difficult cases for differential diagnosis and a pathologic examination is necessary for the diagnosis.

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