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CASE REPORT

Liver tuberculoma

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Abstract: *Background:* Liver tuberculosis is a fairly rare manifestation of extra-pulmonary tuberculosis. We distinguish several forms of liver affection by tuberculosis. One of these is liver tuberculoma, the incidence of which is quite rare. The authors present a case of liver tuberculoma as an occupational disease.
Case report: A 63-year-old veterinary doctor, who was diagnosed through a polymerase chain reaction with liver tuberculosis, was treated unsuccessfully with anti-tuberculosis drugs for a period of 8 months. After an earlier relapse of the focus in the liver it grew again and created an abscess (80x65x80 mm), together with a second satellite focus (20 mm). The patient was therefore indicated for a resection of 3 segments of the right liver lobe. The resection was without complications. The polymerase chain reaction, together with histology, proved the presence of a mycobacterium tuberculosis complex. Three year after the surgery, the patient is completely recovered, without any manifestations of the disease.
Conclusion: Liver resection for liver tuberculoma is indicated in case of progression of the finding and long-term unsuccessful treatment with anti-tuberculosis drugs. It is a safe method with very good long-term results *(Fig. 2, Ref. 12).* Full Text (Free, PDF) *www.bmj.sk.*
Key words: liver tuberculoma, diagnosis, surgery.

If there was talk of an almost complete elimination of tuberculosis in the developed countries of the world in the 2nd half of the 20th century, there was a renewed dramatic increase in the incidence of tuberculosis in the population in the 1980s. The reason was the epidemic incidence of AIDS, the increase in the number of intravenous drug abusers and immuno-compromised patients.

Isolated liver tuberculosis (LTB) is comparatively rare in an extra-pulmonary form. Clinically it is often dormant or it is manifested through an atypical symptomatology. Its differential diagnosis is difficult and may often be confused with a tumour of the liver. Among the general diagnostic resources avalable for liver lesions are ultrasonography (USG), computer tomography (CT), magnetic resonance (MRI) and positron emission tomography (PET CT). The polymerase chain reaction (PCR) of liver tissue is the basic diagnostic method.

We would like to present a case of liver tuberculoma where, after several months of unsuccessful treatment, we indicated a liver resection with a very good therapeutic effect.

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Case report

A 63-year-old veterinary doctor, diabetic, hypertonic, was sent to our clinic for a prograding liver tuberculoma. LTB was diagnosed from a puncture liver biopsy with the PCR method, the serology result was negative. In the puncture biopsy of the liver Mycobacterium tuberculosis complex was determined. The patient had been treated with anti-tuberculosis drugs (ethambutol, ofloxacin, clarithromycin) for a total of 8 months. After the previous relapse of the finding in liver, the focus growth recurred, and at the time of the patient's admission to our clinic it measured, according to the CT, 80x65x80mm (localized in the right liver lobe) (Fig. 1) with a satellite 20 mm focus (localized on the left). No pulmonary or other extra-pulmonary localizations of tuberculosis were demonstrated. The patient was afebrile, generally in very good condition, without any symptomatology. The laboratory findings were within normal limits. Hyperglycaemia was well corrected with perperoral anti-diabetic drugs.

In view of the progression of the liver finding, we carried out surgery toof the liver on December 5, 2005. Grossly there was already an obvious large volume focus in the right lobe, occupying the 6th and 7th liver segments. Peroperative USG demonstrated another satellite focus of 20 mm in diameter, localized in close proximity to the middle liver vein at the depth of the liver parenchyma. Because of this finding, we decided in favour of a resection of the Vth, VIth and VIIth liver segments, leaving the 20 mm focus near the middle liver vein. The above-mentioned anti-tuberculosis drugs were administered perioperatively. Histological examination of the liver sample (Fig. 2)

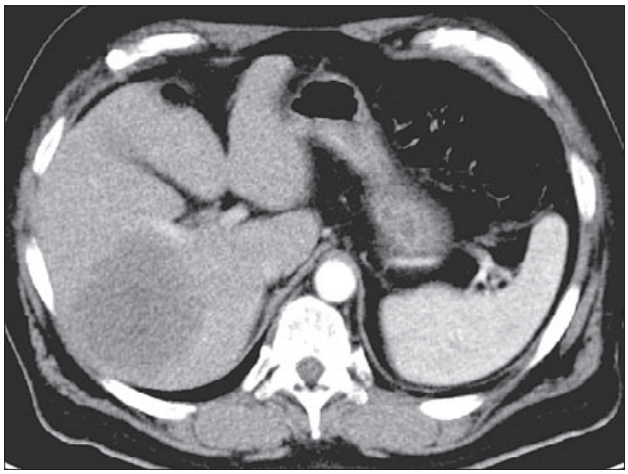

Fig. 1. CT imagepicture of liver tuberculoma (80x65x80 mm) localized in the right lobe.

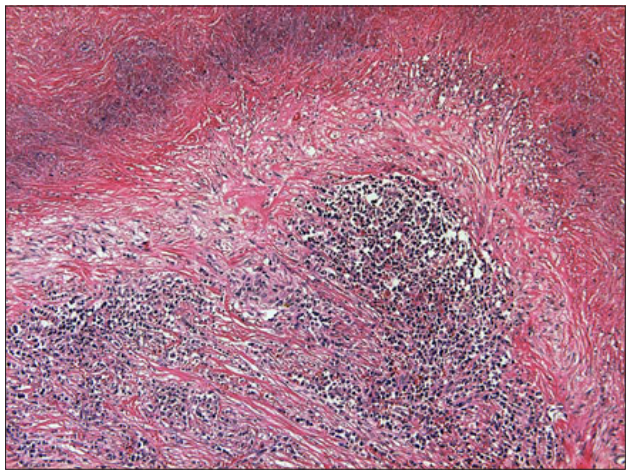

Fig. 2. Microscopic examination – the edge of necrotic area with granulomatous reaction. On the left upper corner it is possible to see karyorrhectic debris typical for Mycobacterial activity. HE 200x.

confirmed the presence of Mycobacteria. The samples were also tested for the presence of mycobacterial DNA by PCR. Two different methods were used for the detection of the Mycobacterium. Nested PCR, amplifying a 142 bp fragment of the gene encoding the 65 kDA antigen, was used for detection of the presence of the Mycobacterium species variety (1). PCR protocol, used for the detection of the Mycobacterium tuberculosis complex (M. tuberculosis, M. bovis, M. microti, M. africanum), was a nested procedure that amplified a 123 bp fragment of IS 6110, an insertion sequence usually found in multiple copies within the M. tuberculosis complex genome.

The postoperative course was without complications and the patient was released for home treatment, with continuing anti-tuberculosis therapy, in a generally very good condition on December 22, 2005. During an out-patient control examination--check-up in February 2006 the CT showed no 20mm focus visible near the middle liver vein. The following control check-upexamination in May had the same result, and the patient was told to discontinue the anti-tuberculosis drugs. The latest check-upcontrol visit, performed in October 2006, confirmed that the patient was without problems, and with normal CT findings in the liver.

Discussion

The abdominal form of tuberculosis is the second commonest occurrence after lung localization, and it affects mainly the intestine, mesenteric glands and peritoneum. A liver localization is quite rare. May Robson was the first who described the occurrence of liver tuberculosis in 1895. In the world literature there are a few papers connected with the diagnosis and treatment of the liver form of tuberculosis, but most commonly as a presentation of a case report (1, 2, 3).

Liver tuberculosis occurs in all 3 clinical forms (4). The first, with the highest incidence, is a diffuse liver affection, which comes together with the miliary type pulmonary tuberculosis. The second form is the so-called granulomatous hepatitis, which does not have to be connected with pulmonary tuberculosis. The third form is the least common – liver tuberculoma (LTB), often with a liver abscess. LTB also includes its biliary form. The symptomatology of LTB is very vague, from asymptomatic forms to uncertain abdominal pains, temperature, weight loss, bleeding (5) and obstructive icterus (in a biliary form) from the enlarged nodes in the area of hepatoduodenal ligament. Hepatomegaly is present in about half of the patients with LTB. Biochemical examination is in most case negative, as was the case with our patient. In the biliary form there may be an increased level of alcaline phosphatase. A direct, clinical diagnosis of LTB is therefore very rare. One reason for this is also the fact that despite the increase of tuberculosis in the population one does not think of the liver manifestation (6).

Imaging studies (USG, CT, MRI, PET CT) are often of little help in diagnosis, since in most cases they deal with small granulomatous lesions of about 2 mm in diameter (7, 8). In large tuberculomas it is necessary, from a differential diagnostic point of view, to distinguish a primary or secondary liver tumour, and in case of the occurrence of an abscess this must be distinguished from an abscess of a different microbiological origin (9, 10)**.** For this reason a needle biopsy under USG or CT control is a very good diagnostic method, and on the basis of this procedure it is possible to diagnose, with high precision, LTB by PCR. Laparoscopy with a direct biopsy of liver focus is then an even more precise method. PCR method is at present the basic diagnostic procedure for LTB because it permits a quick determination and specification of the Mycobacteria. Some falsely negative PCR results are given through the absence of Mycobacteria in the sample of liver tissue, rather than through a fault in the PCR methodology itself. It is therefore wise to repeat the biopsy when there is a suspicion of LTB.

The basic therapeutic procedures for liver tuberculosis are, as with other tuberculosis localizations in the organism, anti-tuberculosis drugs, administered over a sufficiently long period: usually for a period of 10–12 months. According to the data in

the literature, mortality from liver tuberculosis is still high (11) and fluctuates between 15–42 %. Factors for a bad prognosis are as follows: age <20 years, miliary form of tuberculosis, immunosuppressive therapy, AIDS, cirrhosis of the liver. LTBs, which do not respond to anti-tuberculosis drug therapy, are indicated for surgical treatment. Some authors describe drainage of a LTB abscess as a sufficient procedure (12). In our case we decided for a resection therapy of the affected liver segments under a screen of anti-tuberculosis drugs. Because of its localization and the danger of losing further liver parenchyma during its extirpation, we left a small focus (20 mm) in the area of the middle liver vein in situ, expecting a successful anti-tuberculosis treatment. This procedure turned out to be correct in the subsequent course.

Conclusion

Liver tuberculosis is a rare disease. It is necessary, however, to consider it in the differential diagnosis of liver lesions at a time when there is an increasing incidence of tuberculosis. At present the PCR method of liver tissue sample is one of the basic diagnostic methods. As for treatment, in most cases anti-tuberculosis drugs are sufficient. Only in large tuberculomas, which have not responded to the conservative treatment, is surgical resection with a screen of anti-tuberculosis drugs the method of choice.

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