Pyogenic liver abscess – 20 years’ experience
Comparison of results of treatment in two periods

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Abstract  Background and aims: Our aim is to give an audit of our experience over the past two decades in the form of a retrospective study. Patients/methods: In two equal periods between 01.01.1982 and 31.03.2001, 56 patients (37 males and 19 females) with pyogenic liver abscess were treated. Image-guided percutaneous drainage was performed in 22.2%/20.6% of the patients; the remainder were treated with open drainage with or without biliary tract reconstruction and liver resection. For antibiotic perfusion of the liver an umbilical vein cannula was inserted in 40.7%/24.1%. Microbiological findings, types of therapy, complications and mortality, etiology, patient characteristics, symptoms, and laboratory data were investigated. The results in the two groups were compared and analyzed statistically. Results: The most common cause of abscess, biliary disease, was seen more often in the second period. Solitary liver abscesses were more frequent. The only characteristic biochemical finding was an elevated alkaline phosphatase level. There were more positive cultures in the second period (70.4%/79.3%), and the number of Escherichia coli or Enterobacter aerogenes infections also increased. In the first period the mortality was 18.5%, whereas in the second no patients were lost. Conclusion: We suggest the importance of individualized therapy based on an early and exact diagnosis. The first treatment step should be image-guided drainage, but under well-defined circumstances open drainage can also be performed with good results.

Keywords  Liver · Abscess · Microbiology · Therapy

Introduction

Pyogenic liver abscess (PLA) remains a rare but life-threatening disease with an unacceptable mortality despite the introduction of imaging methods in both diagnosis and therapy [1]. Its most common causes at present are cholecystitis, choledocholithiasis, malignant or benign biliary strictures, percutaneous or endoscopic biliary drainage techniques, and previous biliary–enteric bypass operations [2]. The overall rate of PLA in the United States is estimated to be between 5 and 20 per 100,000 population; most of the series reported from major institutions averaged around two to eight cases a year [1, 2, 3, 4]. Although percutaneous drainage has been increasingly used to treat PLA in recent years, with a success rate of 70–100% [4, 5, 6], traditional surgical drainage is still applied, especially if the image-guided percutaneous methods have failed or a simultaneous surgical intervention is required [6, 7, 8]. The aim of this study is to present our experience and outline the clinical course in PLA of varying origin.
Materials and methods

In the period between 1 January 1982 and 31 March 2001, divided into two relatively equal periods (the first period was closed on 30 October 1991) a total of 56 patients with PLA were treated at the Department of Surgery of Szeged University. All had been admitted and had undergone preliminary examinations elsewhere. PLA was defined on the basis of the clinical manifestations, the results of ultrasonography (US) or computed tomography (CT) or both, as solitary or multiple space-occupying focal lesions. A broad-spectrum combined antibiotic therapy was usually started immediately after the diagnosis. For the exact diagnosis, microorganisms were isolated from the pus of abscess aspirates or blood cultures. In selected cases, if the origin of PLA was unknown, other diagnostic methods such as gastroduodenoscopy or endoscopic retrograde cholangiopancreatography (ERCP) were also performed. All cases were discussed with radiologists before the treatment mode was decided. Only those patients underwent surgery in whom percutaneous drainage had been declined or had failed (seven patients), or when a surgical intervention to correct failed biliary drainage was necessary. Microbiological findings, types of therapy, complications and mortality, etiology, patient characteristics, symptoms, and laboratory data were investigated.

The results of the investigations in the two periods were compared and analyzed statistically. Variables were expressed as means±SD. Statistical analysis of qualitative data and of quantitative data involved the $\chi^2$ and Student's $t$-test, respectively; for the small groups of patients, Fischer’s exact test and the Mann-Whitney U-test were used.

Results

Patients characteristics

In the first period there were 10 women and 17 men with PLA, with mean ages of 67±8.71 years (range: 61–77 years) and 53.9±9.21 years (range: 47–66 years) respectively, in the second period there were nine women and 20 men, with mean ages of 65.6±14.58 years (range: 40–81 years) and 56.2±17.99 years (range: 26–85 years), respectively. In both groups there were more male than female patients, and the females were significantly older than the males ($P=0.0082$ and $P=0.0071$).

Etiology of PLA

In both periods the PLA was predominantly of biliary origin. Others occurred only sporadically. The second period was characterized by improved diagnostics; the number of PLA causes of unknown origin decreased markedly (Fig. 1).

In the second period we operated on 2.5 times more patients with PLA due to intrahepatic perforated cholecystitis, and on only half as many on whom a choledochoduodenostomy had previously been performed (Fig. 2).

Abscess characteristics

The localization of the PLA is depicted in Fig. 1. The mean abscess size was 6.1±1.6 cm (range: 4.4–9.0 cm) in the first period and 7.1±2.9 cm (range: 4–19 cm) in the second. Except for those which had been treated with image-guided drainage, the solitary abscess contained dense fluid with hepatic tissue fragments.