

Pyogenic Liver Abscess

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ABSTRACT

They predominate between the fifth and sixth decade of life, due to the higher incidence of neoplasms and complex biliary diseases, with higher incidence in countries with temperate climate. Most are secondary to biliary or gastrointestinal tract infection. It is often preceded by symptoms that vary from days to two to three weeks, with fever in 90% of patients, followed by hepatomegaly, attack of the general condition, weight loss, anorexia and vomiting and finally hepatodynia. Mortality rates vary in various series from 5 to 10% in North America and Europe to 3 to 30% worldwide. The difference probably lies in the pathology responsible for the condition. Mortality has been shown to be higher in older patients with multiple comorbidities, including cirrhosis, renal failure, sepsis and cancer. Patients treated with aspiration or percutaneous drainage have half the mortality of those treated with antibiotic therapy alone.

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EPEMIOLOGY

They predominate between the fifth and sixth decade of life, due to the higher incidence of neoplasms and complex biliary diseases, with higher incidence in countries with temperate climate. They are usually located in the right lobe, as this has greater blood flow. Previously, it was more common to see multiple abscesses, nowadays single abscesses predominate with a variable size ranging from 5 to 10 cm and its classic presentation is circular.^{1,2}

ETIOLOGY

Most are secondary to biliary or gastrointestinal tract infection.³ **Biliary:** ascending cholangitis (benign/malignant obstruction).³ **Portal vein:** For infection of organ draining into portal system.³

Hepatic artery: Due to septicemia (1%), most commonly due to suppurative peripheral thrombophlebitis in drug addicts, endocarditis, pulmonary, urinary, osteoarticular infections.³

Direct extension: By contiguity (acute cholecystitis, vesicular empyema, subphrenic abscesses, perforated ulcers or other contiguous abscesses).³

Traumatic: When no primary focus of infection is found.³ Years ago it was more common to isolate gram-positive aerobes, now it is more common to isolate gram-negative aerobes. E. coli was the main agent in the past, but nowadays Klebsiella is more frequently isolated.³

Main causative agents of pyogenic liver abscesses
Gram- negative aerobes Klebsiella E. Colli Proteus Pseudomonas spp
Gram-positive aerobes Enterococci Streptococcus
Gram-negative anaerobes B. Fragilis

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Clinical Presentation

It is often preceded by symptoms that vary from days to two to three weeks, with fever in 90% of patients, followed

by hepatomegaly, attack of the general condition, weight loss, anorexia and vomiting and finally hepatodynia. Jaundice occurs

Bacteroides spp
Gram-positive anaerobes Clostridium Anaerobic Streptococci
Fungi

in 30% to 50% of patients and is not a prognostic factor. There may be thoracic symptoms such as pleural effusion, consolidation and pleural rub in 25%; ascites in 25% and splenomegaly in 10%, other symptoms include diarrhea and alterations in mental status.^{5,6,7}

Diagnosis

When pyogenic liver abscess is suspected, blood cultures should be obtained immediately, and imaging by usg/tac should identify the infectious process, which also helps us to identify any associated intra-abdominal pathology. If the abscess is identified by imaging, serology for E. Histolytica should also be obtained, as amoebic abscesses usually do not require drainage. Percutaneous aspiration or drainage with gram stain and culture of the abscess will guide us in choosing the correct antibiotic treatment.^{8,9,10,11}

Laboratory

Increase of bilirubins in 50%, increase of alkaline phosphate and transaminases in 70 to 90%. 75% have leukocytosis of 10,000 to 80,000 / microLt, with bandemia in 40%. Other alterations are anemia in 70%, hypoalbuminemia, elevation of B12 and lengthening of coagulation times. BUN elevation and prothrombin time prolongation are risk factors for severe course, which may even require intensive care unit management.^{12,13}

Cabinet studies

Laboratory studies include chest and abdominal x-rays, ultrasound, CT scan and MRI.¹⁴

Chest radiography has abnormalities in 25-60% of patients, with elevation of the right hemidiaphragm, ipsilateral atelectasis and pleural effusion.¹⁵

Abdominal radiography is of little help, and may find gas within the abscess or hepatomegaly are in 20% of cases.¹⁶

Ultrasound has high sensitivity, so it is the initial diagnostic method.¹⁷

Computed tomography has a sensitivity of 90 to 100%, overcoming limitations that the usg could have, evaluating and locating with greater accuracy lesions up to 0.5 cm in diameter, making it the study of choice.¹⁷

MRI gives more information about the relationship of abscesses with the hepatic veins, which has greater sensitivity and specificity than CT.¹⁷

Guided puncture is the gold standard for identifying the etiologic agent.¹⁷

Treatment

Treatment consists of drainage of the abscess, identification of the pathogen, initiation of an appropriate antibiotic, and treatment of the etiologic cause.¹⁸

Antibiotic therapy

It should not be delayed while awaiting the result of the blood culture, so empirical management should be started immediately with high-spectrum antibiotics with or without metronidazole.¹⁸

High-spectrum penicillins <ul style="list-style-type: none"> ● Piperacillin-tazobactam ● Ticarcillin-clavulanate ● Ampicillin-sulbactam Ampicillin-sulbactam
Carbapenemics <ul style="list-style-type: none"> ● Imipenem ● Meropenem ● Ertapenem
Second generation cephalosporins. <ul style="list-style-type: none"> ● Cefuroxime

All of the above are good initial managements for the

treatment of pyogenic liver abscess. Subsequently, once

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we have the culture and antibiogram, the treatment should be modified.¹⁹

Drainage Procedures

Percutaneous aspiration or percutaneous drainage catheter placement plus antibiotic therapy is the main treatment for pyogenic liver abscess. Both strategies are effective and with low morbidity.

The choice of technique will depend on multiple factors such as the size of the abscess, location, number and viscosity of the contents.²⁰

Endoscopic management

Endoscopic ultrasound-guided needle grafting accompanied in some cases by transgastric or transduodenal stent placement is a new technique for drainage of abscesses located in the left lobes and caudate lobe. It is also used for management of hepatic abscesses in communication with intrahepatic bile ducts.

Laparoscopic management

Indications for surgical management are failure of initial medical treatment and percutaneous drainage, or a contraindication to percutaneous drainage, septic shock, a surgically very accessible abscess with minimal risk of damage to vessels or the biliary tree.^{22, 23}

Surgical drainage and liver resection

Open surgery is indicated for failure of medical treatment, failure of percutaneous drainage and complications secondary to percutaneous treatment such as bleeding or leakage of pus into the peritoneal cavity.²⁴

Primary surgery as a treatment may be required to treat pathologies responsible for pyogenic liver abscess such as diverticulitis, appendicitis, or abscess rupture with secondary peritonitis or bile duct obstruction, which cannot be treated endoscopically or interventional.²⁴

DISCUSSION

Mortality rates vary in various series from 5 to 10% in North America and Europe to 3 to 30% worldwide. The difference probably lies in the pathology responsible for the condition. Mortality has been shown to be higher in older patients with multiple comorbidities, including cirrhosis, renal failure, sepsis and cancer. Patients treated with aspiration or percutaneous drainage have half the mortality of those treated with antibiotic therapy alone. One study showed that the incidence of gastrointestinal cancer is higher in patients with pyogenic liver abscess compared to controls⁷⁻¹⁵.

CONCLUSION

It is important a diagnosis to establish timely treatment, also individualized to each patient

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