

## Upper digestive stenosis due to a hydatid cyst of the liver

### Sténose digestive haute due à un kyste hydatique du foie

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#### RÉSUMÉ

Les complications du kyste hydatique du foie sont dominées par l'infection et la rupture. La compression des organes de voisinage (essentiellement les veines cave et porte et les voies biliaires) peut se voir, et c'est l'apanage des kystes du dôme, du hile et centro-hépatiques. La sténose digestive par compression du duodénum par le kyste hydatique est une complication exceptionnelle.

**Observation :** Un patient de 63 ans, présentait depuis 2 mois une sténose digestive haute associée à une sensation de pesanteur de l'hypochondre droit. La fibroscopie digestive haute a montré une compression extrinsèque de la 2ème portion du duodénum. Les biopsies étaient négatives. La TDM abdominale a objectivé un kyste hydatique du segment VI du foie, adhérent au duodénum, avec une exo-vésiculation comprimant ce dernier. Le patient a été opéré: Il existait un kyste hydatique du secteur latéral droit, comprimant le duodénum. Une périkystectomie intra lamellaire partielle a été réalisée.

**Conclusion :** Le kyste hydatique du foie, affection parasitaire qualifiée de bénigne, risque de donner des complications mécaniques liées à la compression des organes de voisinage (surtout les voies biliaires et les veines). La compression du tube digestif est exceptionnelle. Ceci serait dû à la proximité du kyste du duodénum et à l'épaisseur de la paroi kystique.

#### Mots-clés

Kyste hydatique; Foie; Duodénum; Sténose digestive haute; Chirurgie

#### SUMMARY

The complications of the hydatid cyst of the liver are dominated by infection and rupture. The compression of adjacent organs (mainly the inferior vena cava, the portal vein and the bile ducts) can be seen, when the cyst is located in the dome, in the hilum or within the hepatic parenchyma. Upper digestive stenosis by compression of the duodenum by the hydatid cyst is an exceptional complication.

**Case report:** A 63 year-old patient had, for two months, upper digestive stenosis associated with a sensation of weight in the right hypochondrium. Digestive endoscopy showed an extrinsic compression of the second portion of the duodenum. Biopsies were negative. Abdominal CT showed up a hydatid cyst in the segment VI of the liver, adhering to the duodenum, with an exo-vesiculation compressing it. The patient was operated on: There was a hydatid cyst of the right lateral sector compressing the duodenum. A partial intralamellar pericystectomy was performed.

**Conclusion:** Hydatid cyst of the liver, a parasitic disease described as benign, may give mechanical complications related to compression of adjacent organs (especially the bile ducts and veins). Compression of the digestive tract is exceptional. This is due to the proximity of the cyst to the duodenum and the thickness of the cyst wall.

#### Key - words

Hydatid cyst; Liver; Duodenum; Upper digestive stenosis; Surgery

Hydatid cyst of the liver is a parasitic disease caused by development of *Echinococcus granulosus*.

Complications are dominated by infection and rupture. Compression of adjacent organs (mainly the vena cava, portal vein and bile ducts) can be seen and so is the conservation of the hepatic dome's cysts, cysts of the hilum and intra hepatic parenchymal cysts.

Digestive stenosis by an extrinsic compressing cyst is an exceptional complication. The originality of this case report lies in its rarity.

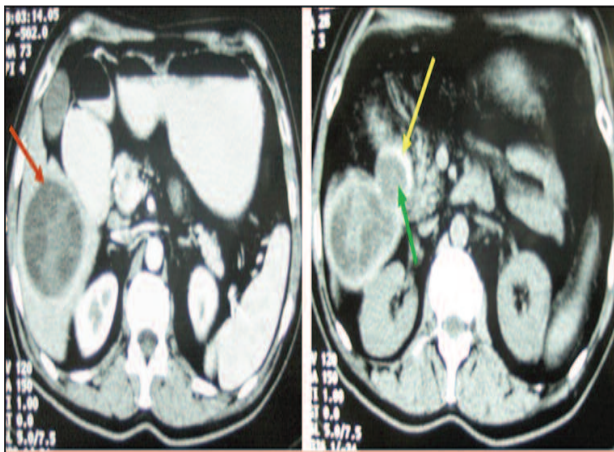
## CASE REPORT

We report the case of a 63 year-old patient who is diabetic, on oral antidiabetic agents, who had been vomiting repeatedly for 2 months without having a history of peptic ulcer disease. The symptomatology of upper digestive stenosis was associated with a sensation of weight in the right hypochondrium. The examination found a dehydrated patient, a succussion splash, without palpable abdominal mass.

The digestive fibroscopy showed an important gastric stasis due to extrinsic compression of the second portion of the duodenum. There were no signs favoring ulcer disease or malignancy. Biopsies were performed and histological examination revealed nothing.

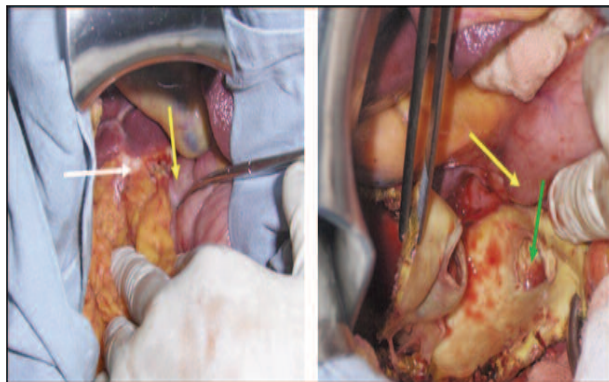
After correcting the electrolytic disorders and the associated functional renal insufficiency, an abdominal CT-scan was done : it was a hydatid cyst at segment VI of the liver, adhering to the duodenum, with an exo-vesiculation compressing it. This was the origin of the substantial gastric distension (Figure 1).

**Figure 1** : CT-scan: Hydatid cyst at segment VI of the liver (red arrow) adhering to the duodenum (yellow arrow), with an exo-vesiculation (green arrow) compressing it.



We decided to do a surgical exploration. There existed a multi vesicular hydatid cyst measuring 6 cm in diameter, at the right lateral sector, with extra parenchymal development, that was adherent to the duodenum. The latter was laminated transversely while remaining flexible. There was an exo-vesiculation of 2 cm, communicating with the cyst, compressing the duodenal wall without fistula. The cyst wall was thick and calcified in some places (Figure 2). We performed a dome-shaped resection (Lagrot's procedure), a partial intralamellar perikystectomy and an epiploasty filling the residual cavity. The postoperative course was uneventful.

**Figure 2** : Operating view: hydatid cyst (red arrow) of the right anterior sector, adhering to the duodenum (yellow arrow). An exo-vesiculation (green arrow), communicating with the cyst, compressing the duodenal wall without encountering any fistula.



## DISCUSSION

Hydatid cyst of the liver is a parasitic disease caused by *Echinococcus granulosus*. It is endemic in many regions of our country [1]. Complications are dominated by infection and rupture especially into the biliary tract [2], the peritoneum and thorax [1, 3, 4, 5].

Hydatid cyst of the liver risks increasing in volume, sometimes by several liters. As a result, the repulsion of neighboring organs can be observed. Regarding the anterior cysts, we can find a covering of the anterior abdominal wall. Those of the lower side develop toward the peritoneal cavity. The cysts of the hepatic dome are in relation with the diaphragm, with possibility of accidents of rupture in the thorax [3, 4, 5]. As for the intraparenchymatous cysts, they are in the contact of the vascular and biliary (superior biliary confluence, portal bifurcation, lower vena cava and the cavo-hepatic junction). The compression is mostly well tolerated. However, it may lead to manifestations of varied gravity such as inferior vena cava obstruction, Budd-Chiari syndrome, obstructive jaundice, acute cholangitis and portal hypertension [6-8]. The compression of the upper digestive tract has not been reported to our knowledge. Theoretically, compression can occur given the anatomical relationships between the upper digestive tract and the left side of the liver. This compression would occur with large cysts or cyst extrahepatic development. Clinical symptoms are classic with epigastric pain and vomiting. Rupture of the cyst in the proximal gastrointestinal tract is possible [9, 10], causing vomiting of a salty liquid called hydatidemia [11].

In our case, the development of outer parenchymal cyst, its proximity to the duodenum and the thickness of the cyst wall, explain the occurrence of this exceptional complication. Morphological and operative findings suggest that the natural evolution of this complication would be a fistula in the duodenal wall and an evacuation of the contents of hydatid cyst in the gut lumen. It would be, thus, a form of "healing" of the digestive stenosis but also an opportunity for developing other complications (essentially suppurative).

Radical surgery is rarely performed in endemic countries given the significant risk of disease recurrence. Widely used in endemic countries, conservative surgery is still the best alternative in complicated forms, especially compressive cysts. Surgical treatment

should have three objectives: sterilization and removal of the parasite, obliteration of the residual cavity and identification with treatment of eventual biliary fistulas. The most used intervention is the Lagrot's procedure which involves dome-shaped resection [12]. It is easy, rapid, and it can be performed by any surgeon without requiring a long experience in liver surgery. Nevertheless, it leaves in place a residual cavity that is unlikely to collapse. Its major disadvantage is the infection of this cavity [8]. In our case, it was the intervention of choice, because of the intimate adhesion of the cyst wall with the duodenum. A little part of the cyst wall was left in place to avoid iatrogenic duodenal fistula.

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## CONCLUSION

Hydatid cyst of the liver is an endemic parasitic disease in the southern Mediterranean countries. Described as benign, it may give mechanical complications related to compression of adjacent organs (especially the bile ducts and veins). Compression of the digestive tract is exceptional and has not been reported in the literature to our knowledge. This is due to the proximity of the cyst to the duodenum and the thickness of the cyst wall.

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