



Journal Homepage: -[www.journalijar.com](http://www.journalijar.com)

## INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/13281  
DOI URL: <http://dx.doi.org/10.21474/IJAR01/13281>



### RESEARCH ARTICLE

#### IT IS NOT ALWAYS A CHOLANGIOCARCINOMA: UNUSUAL PERITONEAL CARCINOMATOSIS REVEALING GASTRIC ADENOCARCINOMA

L. Kallouch, Y. Omor and R. Latib

Service De Radiologie De l'Institut National d'Oncologie de Rabat, Maroc.

#### Manuscript Info

##### Manuscript History

Received: 15 June 2021  
Final Accepted: 19 July 2021  
Published: August 2021

##### Key words:-

Hilar Carcinomatosis, Gastric Cancer ,  
Mri

#### Abstract

In more than 85% of cases, gastric cancer is discovered at an advanced stage. Malignant biliary obstruction is an uncommon complication of gastric cancer, this case report presents a case of a peritoneal carcinomatosis causing biliary obstruction with radiographic dilatation, mimicking cholangiocarcinoma, and secondary to gastric adenocarcinoma.

The imaging investigation had decisive roles in the diagnosis and differential diagnosis of the malignant jaundice predominated by periductal infiltrating cholangiocarcinoma, this pattern of cholangiocarcinoma, is frequently found in perihilar cholangiocarcinoma, it typically shows marked dilatation on imaging of the biliary tree proximal to the tumoral lesion.

Copy Right, IJAR, 2021,. All rights reserved.

#### Introduction:-

Stomach cancers are malignant tumors that develop at the expense of the stomach wall. The diagnosis of this cancer is most often late in our country, making it a cancer with a poor prognosis. In Morocco, it represents 3.1% of all cancers and 33% of digestive cancers. Adenocarcinomas represent 95% of the histological forms. Gastric cancer is discovered at an advanced stage in more than 85% of cases. The nearby peritoneum is the mostly probable position of distant metastasis in gastric cancer.

Revealed by Jaundice, rare complication of gastric malignancy with a poor prognosis. There is a wide variety of benign and neoplastic lesions at the liver hilum that may cause biliary stricture in particular, inflammatory lesions may present with the same radiological features as those from malignant tumoral causes. Imaging findings of hilar metastasis mimic primary cholangiocarcinoma.

This case report presents a case of a peritoneal carcinomatosis causing biliary obstruction with radiographic dilatation, mimicking cholangiocarcinoma, and secondary to gastric adenocarcinoma

#### Report case:

This is a 32-year-old patient, presented to the medical emergency for febrile cholestatic jaundice of progressive onset for 2 months, the history of the disease goes back to 2 months by the progressive onset of a cutaneous-mucous icterus associated with epigastric pain and vomiting all evolving in a context of deterioration of the general condition and weight loss estimated at 20kg in 3 months. Clinical examination found a patient febrile at 38 °, with frank cutaneous-mucous jaundice, a tender, supple abdomen, not distended, or collateral circulation. First-line paraclinical examinations, laboratory tests, chest X-rays and abdominal ultrasound were performed in the emergency

**Corresponding Author:- L. Kallouch**

Address:- Service De Radiologie De l'Institut National d'Oncologie de Rabat, Maroc.

department. Biologically, there was an increase in total bilirubin at the expense of conjugated bilirubin, normochromic normocytic anemia at 6.7g / dl, the level of platelets and white blood cells was normal, abdominal ultrasound performed in our formation showed the presence of a heterogeneous tissue infiltration limited to the hilar plate associated with a thickening of the main bile duct at this level. the gallbladder appeared without anomaly, as well as there is no dilation of the intrahepatic bile ducts, and no clearly visible hilar lymphadenopathy or liver damage.

During her hospitalization, the patient underwent an abdomino-pelvic CT scan (figure 1, 2), the latter confirmed the presence of heterogeneous infiltration of the Hilar plate not taking the contrast, we also found the presence of a thickening of tissue budding of suspicious-looking gastric antrum, important dilatation of intrahepatic ducts associated with moderate abundance of peritoneal effusion.

Laboratory data revealed increased liver function studies, including an aspartate aminotransferase level of 95 IU/L (normal : 36 IU/L), alanine aminotransferase level of 75 IU/L (normal : 41 IU/L), an alkaline phosphatase level of 515 U/L (normal : 104 IU/L), and a total/direct bilirubin level of 2.61/1.53 mg/dL (normal, 1.2/0.4 mg/dL). Abdominal ultrasonography was negative for focal lesions. With a presumptive diagnosis of obstructive jaundice, magnetic resonance cholangiopancreatography (MRCP) was performed.

Abdominal magnetic resonance imaging revealed the presence of tissue infiltration of the limited hilar plate and of the main bile duct which is thickened, responsible for dilation of the intrahepatic bile ducts (figure 3 and 4). This is associated with the presence of thickening of the gastric wall in T1 hypointense, T2 iso-signal, with restriction of diffusion and significant contrast enhancement.

Echendoscopy was performed and confirmed the diagnosis.

### **Discussion:-**

Gastric cancer remains a major public health problem worldwide, constituting the third leading cause of mortality by cancer. In Morocco, it accounts for 3.1% of all cancers and 33% of digestive cancers. Adenocarcinomas represent 90% of the histological forms of malignant gastric tumors [1]. Thirty percent of gastric adenocarcinomas are diagnosed as unresectable peritoneal carcinoma and require palliative treatment [2].

Malignant biliary obstruction is an uncommon complication of gastric cancer and its incidence is reported to be 1.3–2.3% [5]. The vast majority of cases of jaundice in gastric cancer result from obstruction of the biliary tree secondary to malignant lymph nodes, most commonly at the hepatoduodenal ligament, or as a result of hepatic metastases leading to intrahepatic obstruction [2–4].

Some other General signs frequently observed such as the deterioration of the general condition is present in 80% of cases, but without being associated with digestive disorders. Long-term fever, anemia may be encountered. Physical sign is poor, peritoneal metastases can be detected on digital rectal examination. Ascites secondary to peritoneal metastases can be seen (figure 2). These physical signs are found at the late stage.

Involvement of the peritoneal folds may occupy the total length of the corresponding peritoneal reflection to reach and invade other intra-abdominal structures, it acts as bridges between abdominal organs allowing involvement from one organ to another and constitute a common route for malignant dissemination [7].

According to the results of imaging through the studies, it was demonstrated that the causes of malignant biliary obstruction caused by advanced gastric cancer were classified into five types: intraductal metastasis, enhanced ductal-wall thickening or a solitary mass; periductal lymph-node enlargement; a periductal seeding mass; extrinsic compression caused by a metastatic liver mass; and direct invasion by a primary or recurrent cancer [6].

Initial radiological assessment, in most patients with perihilar biliary tract malignancies, is made with non-invasive radiographic investigations especially ultrasonography, it allows especially indirect signs such as isolated intrahepatic dilatation can be useful in suggesting the diagnosis, but rarely allows direct demonstration of perihilar biliary cancer. However, in most cases, additional diagnostic procedures are necessary to confirm the diagnosis, predominated by computed tomography (CT), and magnetic resonance imaging (MRI) are the means of confirmation of biliary obstruction, based on findings of duct dilation or mass lesions.

On CT, the involved bile ducts are diffusely narrowed or obliterated. However, not every patient with jaundice and biliary obstruction in the hepatic hilum should be diagnosed straight away as hilar cholangiocarcinoma, because, almost 25% of cases has other disease that has obstructed the hepatic confluence [9], includes causes of benign stricture such as sclerosing cholangitis (primary, IgG4-related) or choledocholithiasis causing inflammation, thickening of the bile duct, and reactive cytologic atypia. In addition, malignant entities such as extension of primary gallbladder carcinoma, extension of an intrahepatic cholangiocarcinoma are also important differentials [9].

Imaging findings of intrabiliary metastasis mimic primary cholangiocarcinoma, and high-attenuation intraductal masses are regarded to be indistinguishable from the primary biliary malignancy [8, 13].

Early peritoneal invasion is manifested as linear strands in the fat adjacent to primary tumor, local thickening of the peritoneal folds, it can be chowed as changes in the CT density or the MRI signal intensity of the peritoneal fat. From the lesser curvature of the stomach, invasion of the left liver lobe or the porta hepatis may occur along the gastrohepatic or the hepatoduodenal ligament, respectively. Biliary or even hepatic tumors may also spread along the gastrohepatic and hepatoduodenal ligaments [8].

Ductal invasion and spread may proceed via perineural or peribiliary infiltration from an adjacent mass or by intraductal tumor growth. In particular, central ductal invasion by metastasis may be mistaken for perihilar cholangiocarcinoma[12]. Therefore, when an intraductal tumor is found in a patient with a history of extrabiliary malignancy, the presence of a contiguous parenchymal mass with dilatation of the involved duct suggests the presence of intraductal metastasis, rather than primary cholangiocarcinoma [11].

The MRI should be an ideal technique to evaluate the peritoneal carcinomatosis lesions, whose evaluation requires fat-suppressed, gadolinium-enhanced, spoiled gradient-echo sequences [14]; the radiologic and histological characteristics of biliary intraductal metastasis of advanced gastric cancer are uniform, linear or band-like, enhanced biliary wall thickening [13]. Periductal thickening is usually iso-hypo enhancing in arterial and portal phases and shows marked enhancement on delayed phase imaging (Figure 4) [15].

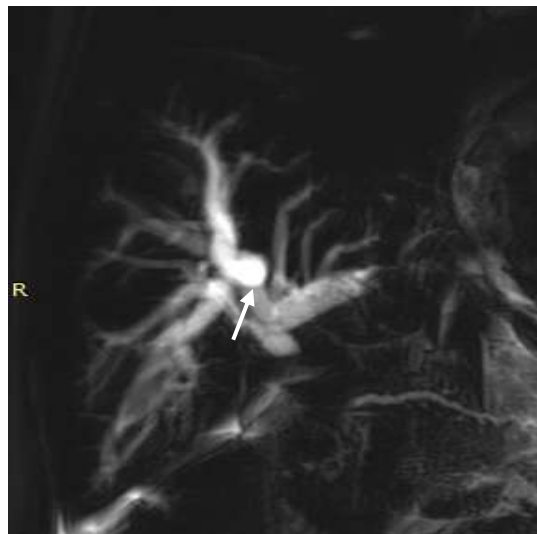
In more than 85% of cases, gastric cancer is discovered at an advanced stage. In the literature, the radiological sites making complete surgery improbable are: hepatic hilum, lesser omentum, gastrosplenic ligament, mesentery, diaphragmatic domes, hepatic parenchyma, para-aortic region, thoracic bases (pericardium, lungs or pleura), abdominopelvic wall [17].



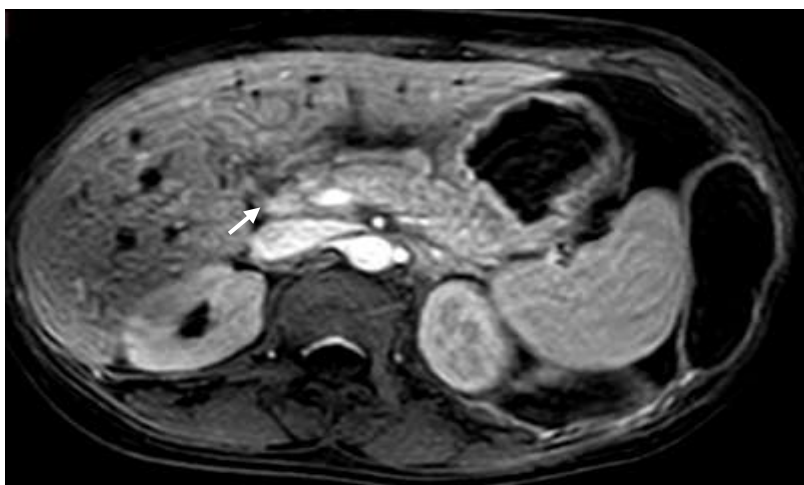
**Figure 1:-** Coronal CT scan taken in the patient, shows dilation of the intra and extrahepatic bile ducts upstream of an infiltration of hypodense fat in the hepatic hilum (white arrow).



**Figure 2:-** Axial section of the abdominal CT scan shows tissue infiltration of the hepatic hilum (white arrow) responsible for dialation of the bile ducts inside and the wirsung duct outside, associated with a thickening of the peritoneal layers which are enhanced by the contrast product (arrowhead) and ascites (yellow arrow).



**Figure 3:-** 3D MRCP shows the dialataaion of the intrahepatic bile ducts and the main bile duct(white arrow).



**Figure 4:-** Axial MRI slice (T1 FAT SAT sequence after injection of the contrast product) shows the peri-hilar tissue infiltration poorly limited and enhanced by the contrast product(white arrow).

**Conclusion:-**

Malignant hilar obstruction may be due to cancers other than cholangiocarcinoma. According to literature, the most frequent site of obstruction caused by metastatic gastric cancer was the common bile duct. MR imaging of the hilar region is the best determinant of the presence of a malignant tumor. The cause of obstruction was predominantly lymph node metastasis along the hepatoduodenal ligament. The location opposite the hepatic hilum makes the tumor unresectable.

**Bibliographie:-**

1. Global cancer statistics; Lindsey A Torre, Freddie Bray, Rebecca L Siegel, Jacques Ferlay, Joannie Lortet-Tieulent, Ahmedin Jemal., 2012. a cancer journal for clinicians. 65: 87-108.
2. L'impact de l'implémentation d'un programme d'exploration pré thérapeutique par cœlioscopie exploratrice de l'adénocarcinome gastrique. N. Elbahaoui, F. Alazaoui, A. Souadka, A. Benkabbou, A. Majbar, R. Mohsine. <https://doi.org/10.1016/j.jchirv.2020.07.104>
3. The role of radiation treatment in management of extrahepatic biliary tract metastasis from gastric carcinoma. Kim GE, Shin HS, Seong JS et al. *Int J Radiat Oncol Biol Phys* (1994) 28:711–717
4. A survival analysis of patients with malignant biliary strictures treated by percutaneous metallic stenting. Brountzos EN, Ptochis N, Panagiotou I et al. *Cardiovasc Intervent Radiol* 30: (2007) 66–73
5. Role of percutaneous transhepatic biliary drainage in patients with obstructive jaundice caused by local recurrence of gastric cancer. Makino T, Fujitani K, Tsujinaka T et al. *Hepatogastroenterology* 2008;55:54–57
6. Gastric adenocarcinoma causing biliary obstruction without ductal dilatation: a case report Karl Vaz, Raphael P. Luber, Catriona McLean, Jan Frank Gerstenmaier and Stuart K. Roberts. Vaz et al. *Journal of Medical Case Reports* (2019) 13:72 <https://doi.org/10.1186/s13256-019-1972-4>
7. Meyers MA (2000) Intraperitoneal spread of malignancies. In: Meyers MA (ed) *Dynamic radiology of the abdomen: normal and pathologic anatomy*, 5th edn. Springer, New York, pp 131–263.
8. Imaging of Peritoneal Cavity Carcinoma. Prassopoulos P.K., Courcotsakis N.A., Tentes A.K. (2018). In: Gouliamos A., Andreou J., Kosmidis P. (eds) *Imaging in Clinical Oncology*. Springer, Cham. [http://doi-org-443.webvpn.fjmu.edu.cn/10.1007/978-3-319-68873-2\\_58](http://doi-org-443.webvpn.fjmu.edu.cn/10.1007/978-3-319-68873-2_58)
9. Differential diagnosis of sclerosing cholangiocarcinomas of the common hepatic duct (Klatskin tumors). Wetter LA, Ring EJ, Pellegrini CA, Way LW. *Am J Surg* 1991; 161: 57-62; discussion 62-63 [PMID: 1846276 DOI: 10.1016/0002-9610(91) 90361-G]
10. The role of radiation treatment in management of extrahepatic biliary tract metastasis from gastric carcinoma. Kim GE, Shin HS, Seong JS et al (1994) *Int J Radiat Oncol Biol Phys* 28:711–717
11. Kim JH, Byun JH, Lee SJ, et al. Differential diagnosis of sclerosing cholangitis with autoimmune pancreatitis and periductal infiltrating cancer in the common bile duct at dynamic CT, endoscopic retrograde cholangiography and MR cholangiography. *Eur Radiol* 2012; 22:2502–2513
12. Differential CT features of intraductal biliary metastasis and double primary intraductal polypoid cholangiocarcinoma in patients with a history of extrabiliary malignancy. Lee YJ, Kim SH, Lee JY, et al. *AJR* 2009; 193:1061–1069
13. Biliary intraductal metastasis from advanced gastric cancer: radiologic and histologic characteristics, and clinical outcomes of percutaneous metallic stent placement. JooYeon Lee. Dong Il Gwon. Gi-Young Ko. Jong Woo Kim. Kyu-Bo Sung
14. Abdominal Malignansilerin Peritoneal Metastazlarının Tanısında Difüzyon Ağırlıklı MRG' de Görünür Difüzyon Katsayısı Ölçümünün Rolü Mehmet Ruhi Onur, Muammer Akyol, Ahmet Kursad Poyraz, Ercan Kocakoc, Erkin Ogur. *EAJM* 2012; 44: 163-8
15. Differential Diagnosis of Stenosing Lesions at the Hepatic Hilus Jonathan Koea, Andrew Holden, Kai Chau, John McCall, *World J. Surg.* 28, 466–470, 2004 DOI: 10.1007/s00268-004-7034-z
16. Imaging of Peritoneal Carcinomatosis. Santiago González-Moreno, Luis Gonzalez-Bayon, Gloria Ortega-Pérez, and Concepcion Gonzalez-Hernando. *Cancer J.* May-Jun 2009;15(3):184-9. doi: 10.1097/PPO.0b013e3181a58ec3.
17. Peritoneal carcinosis in ovarian cancer: conventional imaging (CT-scan and MRI) C. Bailly C. Bailly, A. Bailly-Glatre, A. Alfidja, C. Vincent, J. Dauplat, C. Pomel; *Bull Cancer* vol. 96, N° 12 décembre 2009
18. Obstructive jaundice in gastric carcinoma: cause, site, and relationship to the primary lesion; Lee BH, Chin SY, Kim SA, Kim KH, et al.. *Abdom Imaging.* 1995;20:307–11.