

KRUKENBERG TUMORS OF OVARIES IN A PATIENT OF CARCINOMA GALL BLADDER- A CASE REPORT

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ABSTRACT

Metastatic ovarian lesions are quite common consisting of 5-10% of all ovarian malignancies. Most commonly they arise from primaries of stomach followed by colon, pancreas, appendix, lung and breast. Metastasis from Gall bladder and biliary system are extremely rare. We encountered one such rare case of krukenberg tumors secondary to gall bladder adenocarcinoma. A middle aged female presented with complaints of pain abdomen and jaundice. Contrast enhanced CT showed infiltrative GB mass with biliary obstruction, metastatic nodal mass, bilateral adnexal multiloculated masses with enhancing septae with ascites. Total abdominal hysterectomy with bilateral salpingo-oophorectomy was done. Histopathology was suggestive of krukenberg tumors of ovaries secondary to adenocarcinoma of gall bladder.

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INTRODUCTION

Secondary ovarian tumors (krukenberg tumors) most commonly arise from primary tumors of stomach, colon, pancreas and breast [1]. Gall bladder and biliary system malignancies are extremely rare causes of krukenberg tumors [2]. We report one such rare case of gall bladder adenocarcinoma with secondaries in bilateral ovaries.

Case Report

A forty year old non diabetic, non hypertensive female patient presented to our hospital with complains of pain abdomen, jaundice, loss of appetite with features of gastric outlet obstruction and lower abdominal lump. Contrast enhanced triple phase CT revealed heterogeneously enhancing infiltrative gall bladder mass with involvement of adjacent liver parenchyma, 2nd part of duodenum, right main hepatic duct and proximal common hepatic duct with resultant bilobar intrahepatic biliary radical dilatation (IHBRD) with preserved primary confluence. Metastatic abdominal lymphadenopathy forming a nodal mass was also present, these nodes were involving head of the pancreas, 2nd part of duodenum and main portal vein causing its attenuation. Common hepatic artery was also encased by the nodal mass with normal post contrast opacification.

with preserved fat planes with the adjacent organs. Presence of moderate ascites and mild right pleural effusion was also noted. Mild omental and mesenteric fat stranding was also present. Radiological diagnosis of malignant gall bladder mass with bilateral ovarian masses possibly due to secondaries from gall bladder was made. Lymph nodal biopsy showed adenocarcinoma of gall bladder. External percutaneous transhepatic biliary drainage catheter was put to decrease jaundice and pyloroduodenal stenting under endoscopy was done to relieve gastric outlet obstruction. Subsequently patient underwent hysterectomy with bilateral salpingo-oophorectomy and specimens were sent for histopathology. On microscopy, the sections revealed large pleomorphic cells showing high grade nuclear atypia. Cystic areas were lined by malignant cells with multiple signet ring cells. Normal ovarian stroma along with large areas of necrosis and hemorrhage were also identified. These features suggested Krukenberg tumors of ovaries from adenocarcinoma gall bladder.



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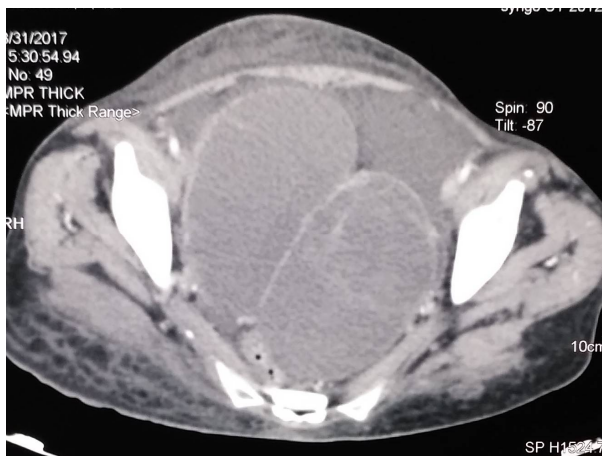


Figure 1a and 1b (a) Contrast enhanced axial CT image showing heterogeneously enhancing infiltrative gall bladder mass with involvement of adjacent liver parenchyma, 2nd part of duodenum, proximal common hepatic duct and pancreatic head. (b) Contrast enhanced axial CT image showing large lobulated, multiloculated mass lesions with enhancing internal septations arising from bilateral adnexal regions.



Figure 2 Contrast enhanced coronal CT image showing heterogeneously enhancing infiltrative gall bladder mass with involvement of adjacent liver parenchyma, 2nd part of duodenum, proximal common hepatic duct and pancreatic head with bilobar IHBRD. Also showing large lobulated, multiloculated mass lesions with enhancing internal septations arising from bilateral adnexal regions.

DISCUSSION

Krukenberg tumors [3] refer to ovarian masses with sarcomatous stroma and mucin-containing signet-ring cells. The term was coined by Krukenberg, a German gynaecologist and pathologist who initially thought these tumors to be unusual primary ovarian malignancies. Later these were recognised as metastatic lesions commonly arising from

primary malignancies of the gastrointestinal tract. Metastasis to the ovary is commonly encountered in practice and 5% to 10% of all ovarian malignancies are metastatic. Ovarian metastatic tumors arise most commonly from primary tumors of stomach followed by Colon, pancreas, appendix, lung and breast. Gall bladder and biliary system are very infrequent sources of these metastases [4,5,6,7]. Prior history of malignancy can be found in 20% to 30% of the cases. Sometimes the primary tumor is so small that it remains undetected for long time after oophorectomy, such tumors are labelled as primary krukenberg tumors [8]. Presenting complains are usually abdominal mass, pain abdomen, abdominal distension and nonspecific gastrointestinal symptoms. Sometimes patients may be asymptomatic. Ultrasound is the first line of imaging. Usually Krukenberg tumors are asymmetrical bilateral and solid masses. They can simulate primary cystadenocarcinoma when composed of cystic or necrotic component. Computed tomography (CT) is the 2nd line imaging modality for krukenberg tumors. CT features of Krukenberg tumors consists of oval or kidney-shaped masses, which tend to preserve the ovarian contour. They are usually bilateral and solid masses, but can also be solid, cystic or complex ovarian masses commonly associated with ascites [1,10]. Large, lobulated, multicystic masses with enhancing soft-tissue components have also been seen [1]. Differentiation between primary and metastatic ovarian cancers is not always possible because of overlapping imaging features, however bilateral, sharply delineated, predominantly solid lesions with necrotic areas is suggestive of Krukenberg tumors[11].

In literature, till now only twenty one such cases have been reported [2, 4-7, 11-14]. Yashwant Kumar *et al.* reported two cases of occult gallbladder carcinoma in two north Indian women presenting with bilateral ovarian masses, which later on confirmed as Krukenberg tumors [7]. Seshu Lakshmi *et al.* reported a case of krukenberg tumor secondary to adenocarcinoma of gall bladder [15].

We here in present a similar rare case of Krukenberg tumor of bilateral ovaries with secondaries from carcinoma Gall Bladder as primary malignancy.

CONCLUSION

The purpose of our case report is to familiarize the radiologists with this rare entity. In a patient of gall bladder malignancy with ovarian masses, possibility of Krukenberg tumors should also be considered.

References

1. Kyunghye C. Cho, Burton M. Gold. Computed tomography of krukenberg tumors. *AJR* 1985; 145:285-288.
2. Ayhan A, Guney I, Saygan-Karamursel B, Tasakiran C. Ovarian metastasis of primary biliary and gall bladder carcinomas. *Eur J Gynaecol Oncol.* 2001; 22:377-378.
3. Krukenberg F. Ueber das Fibrosarcoma ovarii mucocellulare (Carcinomatodes). *Arch Gynecol* 1896; 50:287-321.
4. Jarvi K, Kely CJ, Thomas WE, Gillespie A. Bilateral ovarian metastases from carcinoma of the gall bladder. *Gynaecol Oncol.*2006; 103:361-362.

5. Jain V, Gupta K, Kudva R, Rodrigues GS. A case of ovarian metastasis of gall bladder carcinoma simulating primary ovarian neoplasm: diagnostic pitfalls and review of literature. *Int J Gynecol Cancer*.2006; 16:319-21.
6. Khunamornpong S, Lerwill MF, Siriaunkgul S, Suprasert P, Pojchamarnwiputh S, Chiangmai WN, Young RH. Carcinoma of extrahepatic bile ducts and gall bladder metastatic to ovary: a report of 16 cases. *Int J Gynecol Pathol*.2008; 27:366-379.
7. Kumar Y, Chahal A, Garg M, Bhutani A. Occult gall bladder carcinoma presenting as a primary tumor in two women: two case reports and review of literature. *J Med Case Reports*.2010; 4:202.
8. Al-Agha OM, Nicastrì D. An in depth look at krukensberg tumor. *Arch Pathol Lab Med* 2006; 130:1725-1730.
9. Kim SH, Kim WH, Park KJ, Lee JK, Kim JS. CT and MR findings of Krukensberg tumors: comparison with primary ovarian tumors. *J Comput Assist Tomogr* 1996; 20:393-398.
10. T.Bartalena, M.F.Rinaldi, C.Alboni, G.Giannelli, C.Leioni and G.Rinaldi. Krukensberg tumor from gastric adenocarcinoma: CT findings. *The internet journal of radiology* 2009, 10(1).
11. Miyagui T, Luchemback L, Teixeira GH, de Azevedo KM: Meningeal carcinomatosis as the initial manifestation of a gallbladder adenocarcinoma associated with a Krukensberg tumor. *Rev Hosp Clin Fac Med Sao Paulo* 2003, 58:169-172.
12. Young RH, Scully RE: Ovarian metastases from carcinoma of the gallbladder and extrahepatic bile ducts simulating primary tumors of the ovary. A report of six cases. *Int J Gynecol Pathol* 1990, 9:60-72.
13. Taranto AJ, Lourie R, Lau WF: Ovarian vascular pedicle sign in ovarian metastasis arising from gall bladder carcinoma. *Australas Radiol* 2006, 50:504-506.
14. Majumdar K, Singh DK, Kaur S, Rastogi A, Gondal R: Papillary adenocarcinoma gallbladder with simultaneously detected bilateral ovarian metastasis: a case report. *Internet J Gynecol Obst* 2008, 9:1
15. Seshu lakshmi, Venkata Umakant, Rajeev Donepudi, Pavani, Bhuvan Krishna. "A case report of krukensberg tumor's secondary to adenocarcinoma of gall bladder". *Journal of Evolution of Medical and Dental Sciences* 2013; Vol2, Issue 27, July 8; Page: 4997-5001.

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