

## Case Report

DOI: <http://dx.doi.org/10.18203/2349-2902.ij20151103>

# Von Meyenburg's complexes: the need for timely diagnosis

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**Received:** 08 June 2015

**Revised:** 12 August 2015

**Accepted:** 19 August 2015

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## ABSTRACT

Von Meyenburg's complexes are rare benign findings in the liver. But recent evidence suggests the incidence of carcinoma in a few percent of cases. Here, we present a case with ultrasound and computed tomography imaging findings of Von Meyenburg Complexes and necessitate the importance of follow-up investigations. Case presentation of a 48 year old lady presenting with vague abdominal pain. Lab investigations were done and she was further imaged with ultrasound with GE Voluson 730 and contrast enhanced computed tomography with 64 slice GE VCT both of which are presented in the report. A diagnosis of Von Meyenburg's complexes was given in accordance with USG and CT findings. The need for prompt diagnosis and follow-up is necessary since there has been recent evidence stating the association of biliary hamartomas and cholangiocarcinomas. In this setting, it is prudent the clinician be aware of this simple, yet rare entity.

**Keywords:** Liver, Hamartomas and computed tomography

## INTRODUCTION

Hans Von Meyenburg from whom the entity derives its name discovered Von Meyenburg's complexes in 1918.<sup>1</sup> These are essentially thought to be benign malformations of the intrahepatic biliary ducts due to embryonic malformation.<sup>1,6</sup>

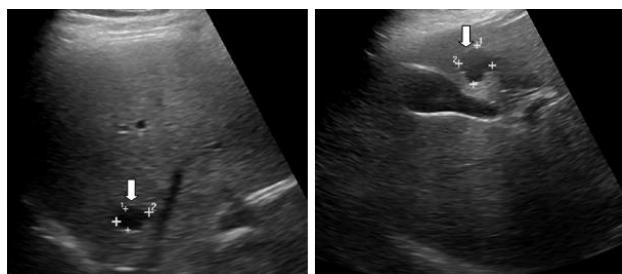
The purpose of this article is to highlight the importance of correct imaging of this rare entity due to its newly reported association with certain malignancies and the need for differentiation from other commonly occurring liver pathologies with similar imaging appearances.

Here, we present a case imaged at our hospital along with the laboratory investigations.

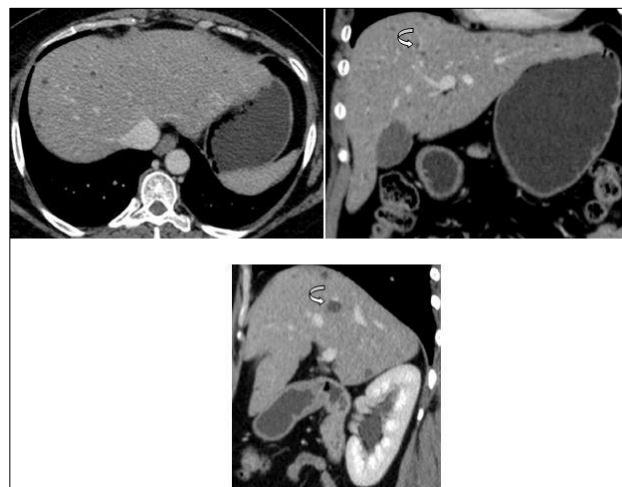
## CASE REPORT

A forty eight year old asymptomatic lady presented to the emergency room with vague abdominal pain. The pain was insidious in onset and aggravated on eating and relieved on NSAID. Initial radiography of the abdomen was done and was found to be normal. Ultrasound imaging of the abdomen was done which revealed two cysts seen in both lobes of the liver with the largest measuring 2 x 1.7 cm in the left lobe with septations. (Figure 1a and 1b). An initial diagnosis of complex hepatic cyst was made and the patient was advised for computed tomography. All the blood investigations were done and were found to be within normal limits. Further imaging with computed tomography revealed innumerable non-enhancing tiny cystic lesions scattered in both lobes of the liver with evidence of non-

communication with biliary radicles (Figure 2a, 2b and 2c). In view of the patient's symptoms and the imaging findings a diagnosis of Von Meyenburg's complexes was made. No further investigations were done and the patient was discharged.



**Figure 1a and 1b: Ultrasound of the abdomen shows two tiny cyst seen involving both lobes of the liver (down arrow).**



**Figure 2a, 2b and 2c: Contrast enhanced axial view of the abdomen with reformatted coronal and sagittal view shows multiple innumerable tiny non enhancing cystic lesions involving both lobes of the liver (curved arrow).**

## DISCUSSION

VMCs are also called biliary hamartomas or biliary macro-hamartomas and are benign malformations found in the liver. They are usually found to be less than 1 cm in size since anything above this measurement can be considered to be cysts. They do not communicate with the biliary tree and are usually seen as tiny cysts with a layer of biliary epithelium around them. They form a part of the group of ductal plate malformations such as Caroli's disease,<sup>3</sup> Hepatorenal Polycystic disease and congenital hepatic fibrosis and have also been associated with peri-biliary cysts.<sup>4,7</sup>

On microscopic examination, they are seen as irregular dilatations of the intra-hepatic biliary ducts. They are

cystic lesions but can be found to have some inspissated bile.

The importance of proper diagnosis stems from the fact that this is a rare entity and can be misinterpreted to be one of the other commonly occurring conditions such as a heterogeneous echo texture of the liver seen in chronic liver disease or as hepatic metastasis, either with a known primary or an unknown primary both causing concern.

Recent evidence shows its' association with cholangiocarcinoma is worrying with some researchers stating the findings of dysplastic tissue adjacent to areas known for occurrence of cholangio-carcinoma. These have been termed as adenomatous neoplastic transformation<sup>4</sup>.

This malignant transformation has been attributed to the presence of bile (stasis) and prolonged exposure to carcinogens.<sup>4</sup>

On USG, VMC appear as hyper-echoic small nodules typically measuring less than 10 mm and may show a comet-tail artifact.<sup>2,4</sup> They can however also appear hypo-echoic with the liver appearing diffusely heterogeneous.<sup>4,5</sup>

On CT, the lesions appear as multiple small hypo-dense nodules, uniform in size and scattered throughout the liver parenchyma.<sup>4</sup> VMCs do not show water attenuation due to partial volume effect and no central or peripheral enhancement after intravenous administration of iodinated contrast.

VMCs on MRI appear hypo-intense on T1 and intensely hyper-intense on T2<sup>5</sup>. Here, the role of MRCP cannot be stressed enough as they clearly show no communication with the biliary tree along with normal appearing intra and extra hepatic ducts.

Which brings us to some of the important differential diagnoses.<sup>4</sup>

- Liver metastasis - Heterogeneous with enhancement after contrast administration.
- Hepatic cysts - Anechoic with posterior acoustic enhancement.
- Caroli's disease - which shows communication with the biliary tree and a central enhanced nodule.
- Micro-abscesses - History of infection usually present and shows peripheral wall enhancement.
- Peri-biliary cysts - noted in the hilum and intrahepatic portal branches region.

VMCs are a rare entity in the liver with a characteristic imaging appearance. They are usually asymptomatic with

normal liver function tests but can occasionally be present with non-specific abdominal symptoms. The clinician should be aware of the characteristic imaging findings in order to differentiate VMCs from other cystic lesions of the liver.

## ACKNOWLEDGEMENTS

The author would like to acknowledge her father, mother and friends for their patience and support.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the institutional ethics committee*

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**Cite this article as:** Padmanabhan K, Ramachandran R, Radhakrishnan PR, Prithiviraj PV. Von Meyenburg's complexes: the need for timely diagnosis. Int Surg J 2015;2:686-8.