

# Mucinous Carcinoma of Gall Bladder an Incidental Finding of a Rare Case

Mahendra Singh<sup>1</sup>, Indrabhan Vishwakarma<sup>2\*</sup>, Neetu Purwar<sup>3</sup>, Y. N. Verma<sup>4</sup>, Tejashvi Sharma<sup>5</sup>

<sup>1</sup>Professor and Head, Department of Pathology, GSVM Medical College, Kanpur, India

<sup>2</sup>Junior Resident III, Department of Pathology, GSVM Medical College, Kanpur, India

<sup>3,4</sup>Lecturer, Department of Pathology, GSVM Medical College, Kanpur, India

<sup>5</sup>Junior Resident II, Department of Pathology, GSVM Medical College, Kanpur, India

\* **Address for Correspondence:** Dr. Indrabhan Vishwakarma, Junior Resident III, Department of Pathology, GSVM Medical College, Kanpur, India

Received: 05 July 2017/Revised: 04 August 2017/Accepted: 28 August 2017

**ABSTRACT- Introduction-** Gall bladder carcinoma is the most frequent carcinoma of the biliary tract. Pure mucinous adenocarcinoma as seen in breast, skin, and pancreas are very uncommon in the gall bladder. Mucinous adenocarcinoma of gall bladder is rarer variant of gall bladder carcinoma.

**Methods-** We were reported a case of 55 years old male presenting at department of surgery of LLR and Associated Hospital with nonspecific symptoms of diffuse pain abdomen with nausea and vomiting, generalized weakness, itching all over body, jaundice associated with anorexia and weight loss for last 4 to 5 months, ultrasonography revealed gross thickening of wall of gall bladder neck with ill define mass lesion and diagnosis was confirmed by USG guided FNAC, Histopathological examination and Immunohistochemistry (IHC).

**Results-** Patient present with pain abdomen, icterus and anorexia, on USG guided FNAC cytological and Histopathological findings are suggestive of mucinous adenocarcinoma.

**Conclusion-** Mucinous adenocarcinoma is the rarest variant of adenocarcinoma gallbladder. Incidental diagnosis of mucinous adenocarcinoma of gall bladder was found by USG guided FNAC followed by the histopathological examination.

**Key-words-** Mucinous Adenocarcinoma, Gall bladder, FNAC, Mucin

## INTRODUCTION

Gall bladder carcinoma is the sixth most common malignant tumor of the gastrointestinal tract and most frequent carcinoma of the biliary tract. Approximately 3:1 ratio between female: male occur. Most patients are older than 50 years [1]. About 99% of gall bladder cancer are carcinoma including more than 90% of them were adenocarcinoma. Carcinomas with copious mucin production are now thought to form a distinct category among malignancies of the gall bladder. [2,3] Mucinous carcinoma constitutes 2.5% of gall bladder carcinoma, other sub type include papillary adenocarcinoma-squamous cell and adenosquamous carcinoma. Gall bladder carcinoma more common in females than males and its incidence increases with age [4]. Cases in which stromal mucin deposition constituted more than 50% of tumor were classified as mucinous carcinoma according to current WHO Classification. [5,10] Cases in which the mucin was confined to the lumina of the infiltrating glandular units, but not present in to the stroma, were not

qualified as Mucinous carcinoma. [6]

a risk factor for gall bladder carcinoma is well known but a definite epidemiologic parallel between gall bladder carcinoma and cholelithiasis occur. Mucinous carcinoma is very uncommon and more aggressive neoplasm of gall bladder comprising 2.5%. [7]

**Case Report:** A 55 year old male patient presented with diffuse pain abdomen, nausea with vomiting, generalized weakness, dyspepsia, itching all over the body. History of significant weight loss and loss of appetite are also present. On examination his vital parameter is within normal limit.

The USG was shown hepatomegaly with diffuse grade 1 fatty liver infiltrate, grossly thickened and irregular wall of the gall bladder, ill defined mass lesion in gall bladder neck. CECT showed grossly thickened wall of gall bladder with ill define mass lesion in gall bladder neck, lesion is infiltrating floor of gall bladder fossa. Another mass lesion is seen in gall bladder fundal region infiltrating segment VI of the liver.

The patient was referred to the department of pathology for USG guided FNAC and guided FNAC was done with all aseptic precaution.

Cholecystectomy specimen also followed by histopathological examination. This is measured 9.0x5.5x4 cm. On cut section inner surface showed speculated mucosa. Wall thickness varies from 0.6-0.8cm

### Access this article online

Quick Response Code	Website: www.ijlssr.com
	 DOI: 10.21276/ijlssr.2017.3.5.25

and one thickened area measuring 6.5x4.5cm are also seen. Histopathological examination of specimen shows singly lying as well as small sheet and clusters of round to oval atypical cells floating in the pool of mucin. At places signet-ring like cells are also seen lying singly or in clusters within the mucin. No lymphovascular invasion was seen.



Fig. 1: Gross appearance of cholecystectomy specimen

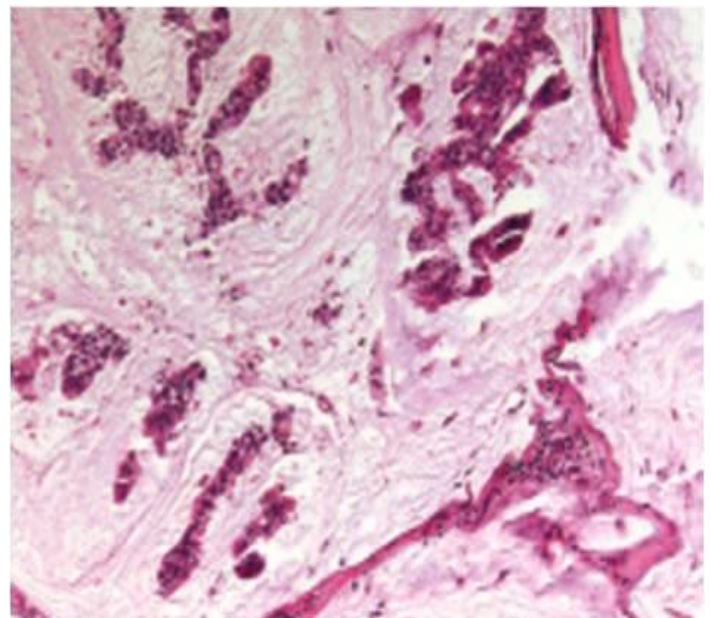


Fig. 2: Microscopic feature of mucinous carcinoma of gall bladder (H & E 100 X)



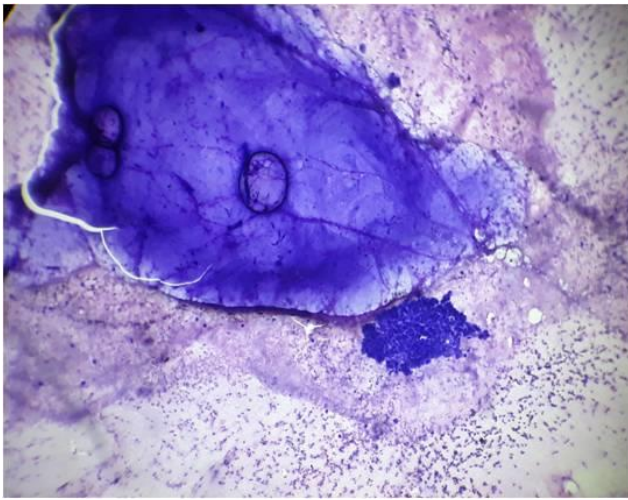
Fig. 3: USG- Gall bladder with thickened wall and dilated lumen

Table 1: Biochemical parameters indicated in Liver function test

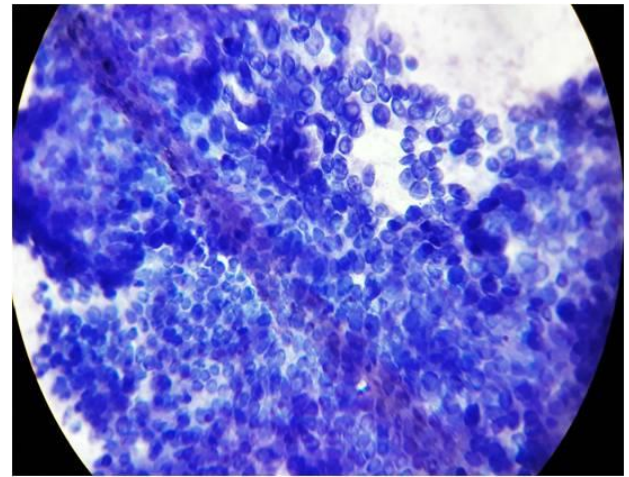
Biochemical parameters	Obtained Value	Normal Reference Range
<b>Total Bilirubin</b>	16.9 mg/dl	0.3 to 1.0 mg/dl
<b>Direct</b>	10.9 mg/dl	0.0 to 0.2 mg/dl
<b>Indirect</b>	6.0 mg/dl	0.4 to 0.8 mg/dl
<b>Total Protein</b>	9.4 gm/dl	5.5 to 8gm/dl
<b>SGOT</b>	152 U/L	5 to 40 U/L
<b>SGPT</b>	150 U/L	5 to 42 U/L
<b>ALP</b>	872U/L	25-120 U/L

**Microscopic/ Cytological findings**

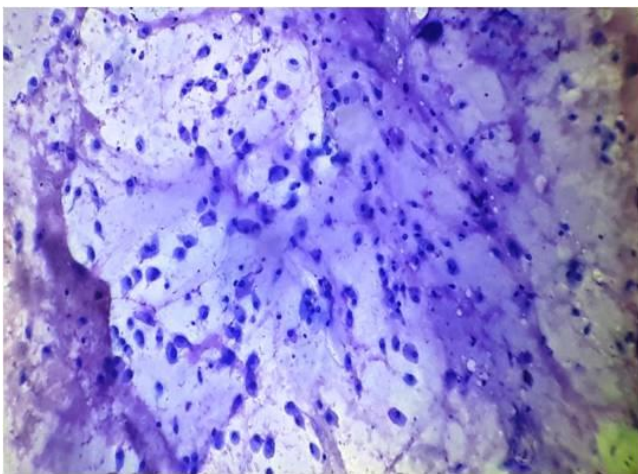
Good cellularity smear reveals dispersed as well as cohesive clusters and sheets of round to oval atypical cells forming acini like structure in places, showing overlapping and overcrowding, mild to moderate degree of pleomorphism, having high nucleocytoplasmic ratio, hyperchromatic nuclei, coarse to clumped chromatin, irregular nuclear membrane. Few of them showing prominent nucleoli, moderate amount of eosinophilic cytoplasm and intracytoplasmic inclusion. Along with few binucleate and multinucleate giant cells, cyst macrophage and cellular derbies, clusters of normal looking hepatocytes are also seen. The background is blood mixed mucinous and findings are suggestive of mucinous adenocarcinoma gall bladder.



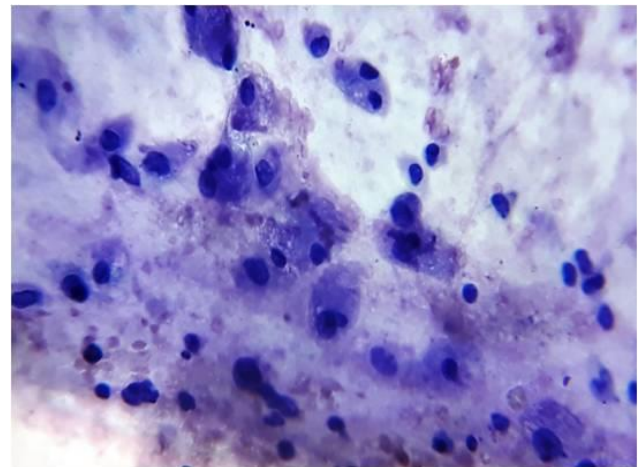
**Fig. 4:** Clusters of malignant cells along with mucin in the background (H & E 100X)



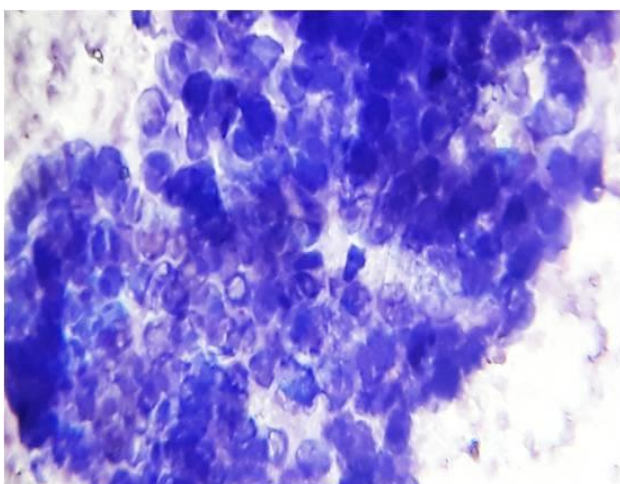
**Fig. 7:** Multiple clusters of malignant cells forming acini in mucin rich background (H & E 400X)



**Fig. 5:** Clusters of malignant cells along with mucin in the background (H & E 400X)



**Fig. 8:** Multiple binucleate and multinucleate giant cells in mucin rich background (H & E 400X)



**Fig. 6:** Multiple clusters of malignant cells showing intracytoplasmic inclusion in mucinous background (H & E 400X)

**DISCUSSION**

Gall bladder cancer is the 6<sup>th</sup> most common gastrointestinal tract (GIT) malignancy [1]. It is less common in male as male to female ratio 1:3 [4]. While mucinous carcinoma constitutes only 2.5%, this is rather uncommon in the gall bladder and is noted in the literature, mostly as individual case reports or small series of a handful of cases. Because of definitional variations, the reported incidence rate varied from 5% to 10%. [2,3] Most patients were older than 50 years, which almost similar as in our case. [6] The presence of gall stone is one of the major risk factors for gall bladder adenocarcinoma but 10–25% of patients with gall bladder carcinoma they don't have associated cholelithiasis as in our case. [8] Many histological types of gall bladder tumor identified, the mucinous adenocarcinoma account for 2.5% of all carcinomas in gall bladder meeting the criteria of more than 50% of extra cellular mucin (WHO). [9] Most are mixed with other non mucinous adenocarcinoma type. In the majority of cases mucinous adenocarcinoma is frequently well differentiated and admixed with conventional adenocarcinoma, while poorly differentiated mucinous adenocarcinoma with metastatic also found. Focal mucinous differentiation and well differentiated adenocarcinoma with intraglandular mucin also occur.

Focal mucinous differentiated adenocarcinomas constitute less than 50% stromal mucin. [1-9] We were differentiated to the mucinous carcinoma from conventional gall bladder adenocarcinoma by MUC2 positivity and from intestinal carcinoma by an often inverse CK7/ 20 profiles [9] (CK7 positive and CK20 negative) [1]. It was CDX2 negative, so can be differentiated pancreatic mucinous carcinoma. [11] It is MUC-6 negative so can differentiate from mammary colloid carcinoma. [12] Mucinous carcinoma of the gall bladder is an unexpected cytological finding done for gall bladder mass in spite of the modern diagnostic procedure, early diagnosis of gall bladder carcinoma is rare, therefore a routine UGS guided FNAC examination of all gallbladder mass is must follow by histopathological examination. [13,14] USG guided FNAC play an important role in finding out the gall bladder carcinoma. Mucinous carcinoma is typically large and advanced tumor at the time of diagnosis and appears to be even more aggressive than another type of gall bladder adenocarcinoma.

## CONCLUSIONS

Mucinous carcinoma of gall bladder defined as rare case of gall bladder carcinoma in which stromal mucin deposition constitutes more than 50% of lesion, exhibit significant clinicopathologic differences from conventional gall bladder adenocarcinoma. It is less common in men as compared to women and present with cholecystitis picture. They also presented at gall bladder mass, which can be evaluated by radiographic examination. As in our case it was an incidental diagnosis of mucinous carcinoma.

It should be kept in mind that gall bladder mass diagnosis as a mucinous carcinoma can be made on USG guided FNAC and further confirmation can be done by histopathological examination.

## REFERENCES

- [1] Mills SE, Greenson JK, Hornick J L, Longacre TA, Reuter VE. Surgical Histopathology Sternberg's 6<sup>th</sup> edition, 2015; 1797-802.
- [2] Adsay NV, Klimstra DS. Not all mucinous carcinomas are equal: time to redefine and reinvestigate the biologic significance of mucin types and patterns in the GI tract. *Virchows Arch.*, 2005; 447(1): 111-12.
- [3] Solcia E, Luinetti O, Tava F, et al. Identification of a lower grade muconodular subtype of gastric mucinous cancer. *Virchows Arch.*, 2004; 445(6): 572-79.
- [4] Rosai J, Ackerman's surgical pathology Rosai Ackerman's. 10<sup>th</sup> edition, 2012; 989.
- [5] Albores-Saavedra J, Adsay NV, Crawford JM, Bosman FT, Carneiro F, et al. Carcinoma of the gallbladder and extrahepatic bile ducts. In: eds. WHO Classification of Tumors of Digestive System. 4th ed. Lyon, France: IARC Press; World Health Organ. Class. Tumours, 2010; 3: 266-74.
- [6] Lack EL. Tumors of the gallbladder and cystic duct. In: Lack EL, ed. *Pathology of the Pancreas, Gallbladder, Extrahepatic Biliary Tract, and Ampullary Region*. New York, NY: Oxford Univ. Press, Inc., 2003; pp. 465-511.
- [7] Dey P. *Fine needle aspiration cytology*. 2<sup>nd</sup> edition, 2015; ch.13: 373.
- [8] Nevra D, Escalona OT, Roa JC, Basturk O, Bagci P, et al. Mucinous Carcinomas of the Gallbladder Clinicopathologic Analysis of 15 Cases Identified in 606 Carcinomas Arch. *Pathol. Lab. Med.*, 2012; 136: 1347-58.
- [9] Allah AAM, Ali MHM, Khalid OI, Gazali A, Allata MAA. Mucinous Adenocarcinoma of the Gallbladder: A Case Report. *Int. J. Multidiscipl. Current Res.*, 2016; 4: 37-38.
- [10] Paul W, Brandt-Rauf A. Whitley Branwood. An Unusual Case of Gallbladder Cancer in an Automotive Worker. *CA Cancer J. Clin.*, 1980; 30: 333-36.
- [11] Mills SE, Greenson JK, Hornick JL, Longacre TA, Reuter VE. *Surgical histopathology sternberg's*. 6<sup>th</sup> edition, 2015; 1617.
- [12] Rosai J. Ackerman's surgical pathology Rosai and Ackerman's. 10<sup>th</sup> edition, 2012; 1700.
- [13] Pudasaini S, Subedi N, Prasad KB, et al. Signet ring cell carcinoma of the gall bladder: A case report. *Nepal Med. Coll J.*, 2011; 13(4): 308.
- [14] Orell RS, Sterrett FG. *Fine needle aspiration cytology*. 5<sup>th</sup> Edition, 2014; 11: 297-98.

International Journal of Life Sciences Scientific Research (IJLSSR)

### Open Access Policy

Authors/Contributors are responsible for originality, contents, correct references, and ethical issues.

IJLSSR publishes all articles under Creative Commons Attribution- Non-Commercial 4.0 International License (CC BY-NC).

<https://creativecommons.org/licenses/by-nc/4.0/legalcode>



### How to cite this article:

Singh M, Vishwakarma I, Purwar N, Verma YN, Sharma T: Mucinous Carcinoma of Gall Bladder an Incidental Finding of a Rare Case. *Int. J. Life Sci. Scienti. Res.*, 2017; 3(5):1411-1414. DOI:10.21276/ijlssr.2017.3.5.25

Source of Financial Support: Nil, Conflict of interest: Nil