ISSN No:-2456-2165

Mucinous Neoplasm of Appendix: Treatment

Dr. Ratikant Narayan Raikar[1], Dr. C.N Manoj Raj[2] , Dr. Manjunath A P[3] , Dr. Rahul Raikar[*]
[1]Associate Professor, Department of General Surgery, AIMS, B G Nagara, India
[2]Post Graduate, Department of General Surgery, AIMS, B G Nagara, India
[3]Post Graduate, Department of General Surgery, AIMS, B G Nagara, India
*Assistant Professor, Department of General Surgery, AIMS, B G Nagara, India

Abstract:-
AIM:This study aims to treatment for mucinous neoplasm of appendix
MATERIAL AND METHODS: A prospective descriptive study was done in patient with history of pain abdomen and distension presented to our hospital
RESULTS: We provide an overview of the most recent information and conflicts about the classification of AMNs, clinical manifestations, and the effectiveness of cytoreductive surgery and hyperthermic intraperitoneal chemotherapy (HIPEC)
CONCLUSION: Appendiceal mucinous tumors are frequently an incidental finding. The treatment of this disease depands on the Histologic tumor grade and the presence of peritoneal dissemination will determine surgery which includes, from appendectomy to cytoreductive surgery.The tretment for Low-grade tumors includes resection of the primary site in early stage disease, or peritoneal debulking and for advance stage includes HIPEC .While treatment for high-grade tumors include debulking surgery and HIPEC with or without preoperative chemotherapy .

Keywords:- *Mucinous Neoplams of Appendix, Appendix, Treatment.*

I. INTRODUCTION

These are the rare tumors accounting for less than 1% of all cancers. The way the symptoms manifest themselves can vary, but the most common symptoms is right iliac fossa abdominal pain, which can be misdiagnosed as acute appendicitis. Lowgrade tumors that are limited to the appendix are typically benign. On the other hand, tumors that have invaded the appendiceal wall or have a high degree of atypia may grow rapidly and are classified as adenocarcinomas.

Types of Mucinous appendiceal tumors are 1) mucinous cystadenoma (MC), 2)mucinous tumors of uncertain malignant potential (M-UMP), 3)mucinous tumors with low malignant potential (M-LMP) and 4)mucinous adenocarcinoma(MA).The treatment of AMN is largely based on stage and histology.

II. CASE SERIES

A. Case 1

A elderly obese female (BMI – 30.6 kg/m^2) presented to the out-patient of surgery department in tertiary care center in July 2021, with a pain abdomen since 6 months with no history of chronic cough/ tuberculosis as well as in close contacts. On examination patient compliants of right ilac fossa pain with rest of the physical examination being normal. Ultrasonography of abdomen and pelvis was performed which suggested sealed off appendicular perforation. The patient was planned for an explorative laprotomy. Intra-operatively a appendix was enlarged and peroration was seen at the tip of the appendix and appendecetomy was performed and specimen was sent for HPE and the wound was closed with primary interrupted sutures. HPE report suggested of low grade mucinous carcinoma of appendix. The scar healed by primary intension and the patient was followed up for a duration of 3 months having no recurrence.

B. Case 2

A elderly male (BMI – 28.9 kg/m^2) presented to the out-patient of surgery department in tertiary care center in December 2021, with abdominal distension and pain abdomen since 3months. Patient has no history of chronic cough/ tuberculosis as well as in close contacts. On examination patient Local guarding was seen in right ilac fossa with minimal ascitis fluid with bowel sound present. Ultrasonography of abdomen was performed which suggested Appendicular perforation with minimal ascitis and CECT Abdomen was done which showed appendicular perforation with periappoendicular collection with ascitis with no lymphnode enlargement. The patient was planned for an explorative laprotomy. Intra-operatively appendicular perforation was seen at the tip with mucin deposition in the abdomen and appendecetomy was done and specimen was sent for HPE and the wound was closed with primary interrupted sutures. HPE report suggested of low grade mucinous carcinoma of appendix. The scar healed by primary intension with no recurrence during the follow up period of 2 months.

C. Case 3

An elderly male presented to the out-patient of surgery department in tertiary care centre in May 2022 with a pain abdomen since 6 months and abdominal distension and pain abdomen since 3months. Physical examination patient Local guarding was seen in right ilac fossa with minimal ascitis fluid with bowel sound present. The rest of the physical examination was under normal limits with no other swelling/ lump noted in the axilla, groin or the neck. Ultrasonography of abdomen abdomen was performed which suggested Appendicular perforation with minimal ascitis and CECT Abdomen was done which showed appendicular perforation with periappoendicular collection with ascitis with no lymphnode enlargement . Patient was planned for surgery – Explorative Laparotomy. Intra-operatively appendicular perforation was seen at the tip with mucin deposition in the abdomen and appendecetomy was done excised specimen was sent for HPE and the wound was closed with primary interrupted sutures. HPE report suggested low grade mucinous carcinoma of appendix. The scar healed by primary intension with no recurrence during the follow up period of 6 months.

III. DISCUSSION

Appendiceal mucinous neoplasms account for 0.4%–1% of all gastrointestinal malignancies, According to estimates, there are 0.12 cases of AMN per 1 million people each year. The majority of appendiceal tumor patients (70–74%) are white, and 50%–55% of them are women. Over time, no discernable demographic change has been seen.

The most frequent clinical manifestation in early stage disease is right lower abdomen pain, which the patient may experience as a result of the appendix being distended by mucus. If the tumor blocks the appendiceal orifice and ruptures, there may be appendiceal perforation.

The buildup of mucous ascites in the peritoneum causes abdominal distension in advanced stages of the disease. Chronic stomach pain, weight loss, anemia, infertility, and newly developed umbilical or inguinal hernias are additional clinical manifestations for this stage.

Ronnett's classification system was then updated and simplified into low- and high-grade carcinoma, where any mucinous epithelium beyond the muscularis mucosa is unambiguous evidence of an invasive appendiceal malignancy. Peritoneal mucinous carcinomatosis (PMCA) and disseminated peritoneal adenomucinosis (DPAM) were further divided into three forms by Bradley et al.

- well-differentiated mucinous adenocarcinoma, grade 1 of (DPAM),
- mucinous adenocarcinoma, grade 2 of 3 (PMCA-I type),
- high-grade mucinous adenocarcinoma, grade 3 of 3 (PMCA type).

➢ *Localized AMNs*

The majority of surgical research implies that a straightforward appendectomy is sufficient for tumors demonstrating only local malignancy since the incidence of nodal spread of well-differentiated localized appendiceal malignancies is less than 2%.In case of positive margins after appendecetomy, Right hemicolectomy should be considered as the next step of mangement .The same is to be considered for peri-appendiceal tumors . Tumor size of 2 cm or larger, high grade histology, or tumor that invades through the muscularis propria, criteria for right hemicolectomy include the following: (1) degree of cellular undifferentiation,(2) increased mitotic activity, (3)Appendicular base involvement (4) metastasis to lymph nodes, or (e) tumor size more than 2 cm. As mentioned above features are risk factor for local recurrences, thus supporting right hemicolectomy.

➢ *Treatment of AMN with Peritoneal Metastasis*

In these patient main stay of tretment includes repeated drainage of the mucinous ascites and serial debulking surgeries.they were also study which showed intraperitoneal chemotherapy with debulking surgery improved the condition of the patient.

IV. CONCLUSION

Staging and histology type are needed for treatment . The tretment for Low-grade tumors includes resection of the primary site in early stage disease, or peritoneal debulking and for advance stage includes HIPEC . Treatment of high-grade tumors options include debulking surgery and HIPEC, with or without preoperative chemotherapy.

REFERENCES

[1]. McCusker ME, Cote TR, Clegg LX et al. Primary malignant neoplasms of the appendix: A populationbased study from the surveillance, epidemiology and end-results program, 1973–1998. Cancer 2002;94:3307–3312.
[2]. Smeenk RM, van Velthuysen ML, Verwaal VJ et al. Appendiceal neoplasms and pseudomyxoma peritonei: A population based study. Eur J Surg Oncol 2008;34:196–201.
[3]. Rokitansky K, Swaine WE, Sir Sieveking EH, Moore CH, Day GE. A Manual of Pathological Anatomy.Vol. 2. Philadelphia, PA: Blanchard and Lea, 1855;24:100–118.
[4]. Elting AW. IX. Primary carcinoma of the vermiform appendix, with a report of three cases. Ann Surg 1903;37:549–574.
[5]. Carr NJ, McCarthy WF, Sobin LH. Epithelial noncarcinoid tumors and tumor-like lesions of the appendix. A clinicopathologic study of 184 patients with a multivariate analysis of prognostic factors. Cancer 1995;75:757–768.
[6]. Gupta S, Parsa V, Adsay V et al. Clinicopathologic alanalysis of primary epithelial appendiceal neoplasms. Med Oncol 2010;27:1073–1078.

[7]. Young RH. Pseudomyxoma peritonei and selected other aspects of the spread of appendiceal neoplasms. Semin Diagn Pathol 2004;21:134–150.
[8]. Collins DC. 71,000 human appendix specimens. A final report, summarizing forty years' study. Am J Proctol 1963;14:265–281.
[9]. Connor SJ, Hanna GB, Frizelle FA. Appendiceal tumors: Retrospective clinicopathologic analysis of appendiceal tumors from 7,970 appendectomies. Dis Colon Rectum 1998;41:75–80.
[10]. Jemal A, Siegel R,Ward E et al. Cancer statistics, 2009. CA Cancer J Clin 2009;59:225–249.
[11]. Ito H, Osteen RT, Bleday R et al. Appendiceal adenocarcinoma: Long-term outcomes after surgical therapy. Dis Colon Rectum2004;47:474–480.
[12]. Bradley RF, Stewart JH 4th, Russell GB et al. Pseudomyxoma peritonei of appendiceal origin: A clinicopathologic analysis of 101 patients uniformly treated at a single institution, with literature review. Am J Surg Pathol 2006;30:551–559.
[13]. Garg PK, Prasad D, Aggarwal S et al. Acute intestinal obstruction: An unusual complication of mucocele of appendix. Eur Rev Med Pharmacol Sci 2011;15:99–102.
[14]. Rutledge RH, Alexander JW. Primary appendiceal malignancies: Rare but important. Surgery 1992;111:244–250.
[15]. Reid MD, Basturk O, Shaib WL et al. Adenocarcinoma ex-goblet cell carcinoid (appendiceal-type crypt cell adenocarcinoma) is a morphologically distinct entity with highly aggressive behavior and frequent association with peritoneal/intra-abdominal dissemination: An analysis of 77 cases. Mod Pathol 2016;29:1243–1253.
[16]. Kabbani W, Houlihan PS, Luthra R et al. Mucinous and nonmucinous appendiceal adenocarcinomas: Different clinicopathological features but similar genetic alterations. Mod Pathol 2002;15: 599–605.
[17]. Rouchad A, Gayet M, Bellin MF. Appendiceal mucinous cystadenoma. Diagn Interv Imaging. 2014;95:113–6.
[18]. Van den Heuvel MG, Lemmens VE, Verhoeven RH, de Hingh IH. The incidence of mucinous appendiceal malignancies: a population based study. Int J Colorectal Disease. 2013;28:1307–10.
[19]. Lai CW, Yue CT, Chen JH. Mucinous cystadenocarcinoma of the appendix mimics acute appendicitis. Clin Gastroenterol Hepat. 2013;11.
[20]. McGory M, Maggard M, Kang H, O'Connel J, Ko C. Malignancies of the appendix: beyond case series reports. Dis Colon Rectum. 2005;48:2264–71