Case study

CONSERVATIVE MANAGEMENT OF HOLLOW VISCOUS PERFORATION IN A COVID PATIENT

ABSTRACT

Introduction: Perforation of Hollow viscous, indicated by pneumoperitoneum on imaging mandates abdominal exploration, Spontaneous perforation of hollow viscous, is usually seen in the first part of the duodenum . Very high mortality is seen and is usually associated with delayed presentation. Successful non-operative management of perforated viscera occurs, but it is generally reserved for patients with reassuring clinical findings. Not enough data has been published on management of hollow viscous perforationincovid positive cases presenting with peritonitis due to hollow vscous perforation.

Aim: Presenting a case with hollow viscous perforation with Corads positive status (CORADS 5, CR severity), at Gadag institute of Medical sciences, Gadag, Karnataka India.

Case Presentation: Here, we present a 41 year old male with acute onset of pain abdomen and abdominal distension for one day, diagnosed to be a case of hollow viscus perforation, with Covid19 positive status. He was resuscitated and managed conservatively with antibiotic coverage and symptomatic management of Covid19.

Results:
Fullrecoveryofthepatientafteraperiodof10dayshospitalstayandunever ntfuldischarge from the hospitalfollowed.

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Conclusion: Prompt resuscitation, under the coverofantibiotics,andacidsuppressantsisanalternativeto surgicaltherapyinacaseofhollow vicous perforation with Covid 19 positive status with inoperability due to hemodynamic unstability.

INTRODUCTION

BACKGROUND

Duodenal perforation may occur due to a variety of causes including peptic ulceration, iatrogenic, trauma etc., and is associated with high mortality rates due to delayed presentation and diagnosis. The investigation of choice is CECT (Contrast Enhanced Computed Tomography). Although X- ray Plain Picture (erect view) of the abdomen with the bilateral domes of diaphragm shows air under the diaphragm, giving a diagnosis of the presence of a hollow viscus perforation, the drawback being, it is non-specific of the site and status of perforation. Although surgery is the mainstay of treatment, the treatment protocol is dependent on the cause of perforation, the site, the timing of presentation and the clinical condition of the patient. Conservative management seems feasible in cases of stable patients with sealed perforation, even though majority of the patients require surgery in acute presentation or due to peritonitis and sepsis.

Optimal methods for the management of duodenal perforations remain controversial. The diagnosis is often delayed leading to decreased survival. There are few randomized controlled studies and management strategies often rely on data from observational studies, or even case reports. One area of controversy includes the role of non- operative management and management of covid- 19 positive cases with high severity score presenting with peritonitis with hollow viscous perforation.

UNDER PEER REVIEW

CASE REPORT:

A 41 year old male presented to the emergency room with pain abdomen, vomiting and fever for three days and distension of abdomenfor one day. On examination patient was oriented, with Blood pressure (BP) 90/60mmHg, pulse rate 100bpm(PR), oxygen saturation (sPO2) 97% at room air, Chest was bilaterally clear, Cardiovascular examination- no abnormality detected, Glasgow Coma Scale (GCS) was 15/15 (E4V5M6). On per-abdominal examination, mild distension and rigidity was noted over the entire abdomen , Peristaltic sounds could not be heard. Digital per-rectal examination was suggestive of a collapsed rectum with finger stained with mucous, no other abnormalities were detected.

Immediate resuscitation was started with two large gauze IV bore cannulas, IV-crystalloids 2litres were administered at 20ml/kg/hr after an initial fluid bolus of 500 mL. Per-urethral catheterisation was done to monitor the urine output which was 200ml in 2hrs. The hemodynamics of the patient was stable. A nasogastric tube was inserted for decompression of the bowel and to remove additional gastrointestinal secretions. Simultaneously a bedside Ultrasonography was done which suggested the presence of moderate fluid collection in the peritoneal cavity, parasplenic and subhepatic regions with multiple intra- peritoneal air-foci. Bedside X-ray plain picture (erect) of the abdomen was obtained which was suggestive of air under the domes of the diaphragm, suggestive of a hollow viscus perforation. His blood routine picture has been shown below table. Coagulation profile was deranged with PT- 22.30 sec, INR- 1.74 and patient was transfused with fresh frozen

UNDER PEER REVIEW

plasma. His oxygen saturation was 88% on presentation and he was started on oxygen at 6L/min.

Due to the ongoing Covid 19 pandemic, a routine nasopharyngeal swab for RT-PCR and HRCT chest was also done. HRCT chest showed features suggestive of sequalae of atypical viral pneumonia (CORADS 5, CT-SS 7/25). As per the covid protocol patient was started on inj. Remdesvir 200mg stat and 100mg for 5days.

There was improvement in his hemodynamic status, he was continued on , injectable antibiotics (Meropenem 1 gm iv 12- hrly, Amkacin 500mg iv 12thhrly, metronidazole 400mg/100ml iv tid), iv proton pump inhibitors (Pantoprazole 40 mg iv 12hrly), infusion paracetamol (100 ml iv 8th- hrly).

Gradually, the patient showed clinical improvement. His blood picture improved, his abdominal distension decreased. From 3rdday onwards patient started showing signs of recovery with improving general condition and decrease in abdominal distention since presentation, he had passed flatus. After consultation with some of the senior most surgeons, it was decided that the patient be continued on conservative management suspecting a sealed perforation. The nasogastric tube aspirate had decreased to nil. He was passing stools. Clinically, it was concluded that the perforation had begun to heal spontaneously. By 4th day bowel sounds appeared. S oxygen saturation mproved to 96% in room air and oral diet was started and gradually increased.

UNDER PEER REVIEW

On day 7, ryle's tube was removed and he was started on sips of oral fluids, which he tolerated very well, no distension of abdomen was noted. The oral fluid intake was gradually increased over a period of 2 days and a trial of semi-solid diet was given. The patient tolerated that very well. On day 10, he was started on solid diet, as small frequent meals. He responded well. He was then shifted to the general ward and was mobilized. He was kept under observation for a period of 2 more days. He was advised to follow- up and was given lifestyle modification advises for the same. On day 13, he was discharged uneventfully, after full recovery.

Table 1. Information regarding health

DAY	MEAN BP (mmHg)	PULSE RATE(bpm)	NG TUBE ASPIRATE(ml)	URINE OUTPUT(ml)	Spo2
1.	128/78	100	150	1000	91% in room air
2.	122/80	102	100	1200	93% in room air
3.	126/72	108	200	1500	93% in room air
4.	116/74	109	120	1500	96% in room air
5.	118/70	79	150	2000	97% in room air

UNDER PEER REVIEW

6.	116/68	88	120	2000	96% in room air
7.	118/72	80	-	2300	97% n room air
8.	120/78	82	-	-	99% in room air

9.	124/80	70	-	2500	98% in room air
10.	118/72	76	-	2500	99% in room air
11.	122/74	80	-	2800	99% in room air
12.	120/68	74	-	3000	98% in room air

Table 2. Pathological tests

	DAY 1	DAY 3	DAY 6	DAY 9
HAEMOGLOBIN(gm%)	14.2	12.8	12.7	13.7
TOTAL LEUCOCYTE COUNT(cumm)	15.6	13.8	10.2	9.0
SERUM CREATININE(mg/dl)	1.16	1.01	0.9	0.8
SERUM SODIUM(mmol/L)	137	138	135	140
SERUM POTASSIUM(mmol/L)	4.4	4.8	4.6	4.2

UNDER PEER REVIEW

DISCUSSION:

In cases with prolonged periods of fasting, chronic alcohol abuse, spontaneous peptic ulcer perforation is seen in the first part of the duodenum. Duodenal perforation is not a rare one but lethal condition due to peritonitis and sepsis, with a varied range of mortality(8- 25%). The duodenal perforation can be free or contained. Free perforation occurs with bowel content leaking freely into the peritoneal cavity whereas, contained perforation occurs when the surrounding organs wall off the area. The gold standard investigation for the diagnosis of a hollow viscus perforation is a CECT Abdomen. But, there are studies which have suggested the use of X-Ray Plain picture of the abdomen, Ultrasonography of the abdomen for the diagnosis of a hollow viscus perforation. A few cases of hollow viscus perforation with Covid19 positive status with successful conservative management have been reported. Earliest case of duodenal perforation was described by Muralto in 1688 and reported by Lenepneau. Taylor's method (1946) for conservative management of perforated ulcer repair consisted of nasogastric aspiration, fluid resuscitation, iv broad spectrum antibiotics, and antisecretory drugs with meticulous clinical and biochemical monitoring of the patient. The first successful surgical repair was reported in 1929 by Dean. The treatment protocol shifted from conservative to open and later to laparoscopic repair with primary repair and placement of an omental (Graham's) patch. The advancement in the treatment modalities has reached up to endoscopic placement of clips, metallic stents over the perforation. The conservative management is limited to delayed presentations with sealed perforations with hemodynamic stability or in old patients with uncontrolled co morbid

UNDER PEER REVIEW

conditions, moribund patients in shock.

CONCLUSION

In a hemodynamicallystable patient, with duodenal perforation, with covid 19 status can be managed conservatively with IV fluids and antibiotics.

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