



Conservative Management of Hollow Viscous Perforation in a Covid Patient

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

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. Conservative management of hollow viscous perforation is reserved for patients with reassuring clinical findings. Not enough data has been published on management of hollow viscous perforation in covid positive cases presenting with peritonitis due to hollow viscous 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 viscous perforation, with Covid19 positive status. He was resuscitated and managed conservatively with antibiotic coverage and symptomatic management of COVID19.

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Results: Full recovery of the patient after a period of 10 days hospital stay and uneventful discharge from the hospital followed.

Conclusion: Prompt resuscitation, under the cover of antibiotics, and acid suppressants is an alternative to surgical therapy in case of hollow viscus perforation with Covid 19 positive status with inoperability due to hemodynamic instability.

Keywords: Hollow viscus; Covid 19; IV fluids; antibiotics.

1. INTRODUCTION

1.1 Background

Duodenal perforation is associated with high mortality rates due to delayed presentation and diagnosis and 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, it is non-specific of the site and status of perforation. The treatment protocol for perforation is dependent on the cause of perforation, the timing of presentation and the clinical condition of the patient, although surgery is the mainstay of treatment [1-3]. 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 [4,5].

Duodenal perforation management remains controversial, due to decreased survival, the diagnosis is often delayed [6,7]. 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 viscus perforation.

2. CASE REPORT

A 41 year old male presented to the emergency room with pain abdomen, vomiting and fever for three days and distension of abdomen for 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 18 gauge IV bore cannulas. 2litres of normal saline were administered after an initial fluid bolus of 500 mL. Per-urethral catheterisation was done to monitor the urine output which was 200 ml in 2 hrs. 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. Erect abdomen X-ray was obtained which was suggestive of air under 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 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 sequelae of atypical viral pneumonia (CORADS 5, CT-SS 7/25). As per the covid protocol patient was started on inj. Remdesvir 200 mg stat and 100 mg for 5days.

There was improvement in his hemodynamic status, he was continued on, injectable antibiotics (Meropenem 1 gm iv 12- hrly, Amkacin 500 mg iv 12thhrly, metronidazole 400 mg/100 ml 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 3rd day onwards patient started showing signs of recovery with improving general condition and decrease in abdominal distention since

presentation, he had passed flatus. After evaluating thoroughly, it was decided that the patient be continued on conservative management suspecting a sealed perforation. The nasogastric tube aspirate had decreased. He was passing stools. It was concluded that the perforation had healed spontaneously. By 4th day bowel sounds appeared. S oxygen saturation improved to 96% in room air and oral diet was started and gradually increased.

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.

3. 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 a common but lethal condition due to peritonitis and sepsis,

with a mortality rate of 8- 25%. The duodenal perforation can be of two types, free and 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. CECT Abdomen is the gold standard investigation for the diagnosis of a hollow viscous perforation. 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. Cases of hollow viscus perforation with Covid19 positive status with successful conservative management have been reported. 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 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 conditions, moribund patients in shock.

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
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

4. CONCLUSION

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

CONSENT

As per international standard or university standard, patient's consent has been collected and preserved by the authors.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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