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Solid organ injury during percutaneous endoscopic gastrostomy tube placement, a review of two cases.

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Background

First described in 1980, percutaneous endoscopic gastrostomy (PEG) placement is one of the most common forms of durable enteral access today. The "safe tract technique" –utilizing an aspirating, liquid-filled syringe with simultaneous air return and endoscopic visualization- was developed to minimize complications of PEG placement. However, this technique has less utility for avoidance of solid organ injury. Transillumination may assist in avoidance of solid organs, but is less effective in obese or non-white patients. Despite utilization of such safety techniques, PEG placement is not without potential complication.

Methods

We present the cases of two patients who underwent PEG tube placement. Both had multiple prior abdominal surgeries. On post-operative day one, due to clinical and laboratory findings consistent with post-operative SIRS response, each received a CT scan with water-soluble contrast. The PEG tubes were found to be traversing through the left hepatic parenchyma with the silicone retention dome within the stomach. There was no evidence of contrast extravasation or large hematoma.

Figure(s)



Fig 1: Liver (yellow) with tract of PEG tube (red). Contrast is visible in the gastric lumen.

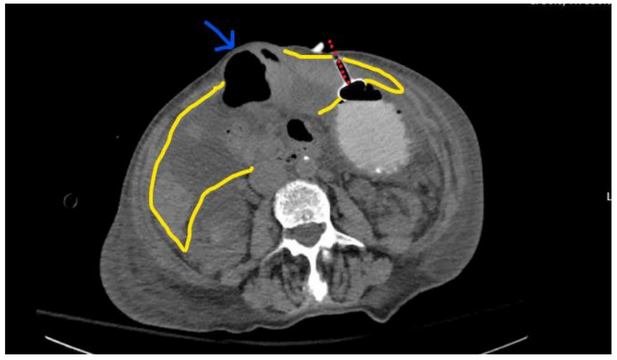


Fig 2: Liver (yellow) with tract of PEG tube (red). Ventral hernia (blue) is visible, as well as intraluminal gastric contrast.

Results

After identification the patients were closely monitored for hemodynamic changes. Antibiotics were initiated. The bumpers, normally kept at 1cm from the skin, were cinched down to ensure hemostasis. Tubes were secured to the skin to prevent inadvertent dislodgement. After the initial inflammatory response resolved, tube feeds were initiated and well-tolerated. Both patients recovered without further PEG complications and were discharged with PEG tube in place. There were no attempts to revise or replace the tubes.

Conclusions

We present these cases so that we may review the literature and describe management of these likely under-reported complications. We identified several case reports demonstrating transhepatic PEG placement. While rare, this risk must be recognized. Safe tract and transillumination techniques may reduce this complication, however neither can prevent all injuries. We stress the importance of reviewing preoperative imaging with attention to interposed organs prior to attempted PEG. Should solid organ injury occur, it is important not to dislodge the tube causing further parenchymal injury. We advise gentle compression from the bumper to ensure hemostasis. Patients should be monitored closely for signs of peritonitis or abdominal sepsis. If clinically stable, the tube may be used as normal. For removal, we recommend the PEG not be removed via the traction method, as this could disrupt the parenchymal tract. Alternatively, the tube should be removed by cutting the tube externally with per oral endoscopic removal of the transected tube.