

Robotic-Assisted Thoracoscopic Repair of Liver Herniation after HELLP Syndrome



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BACKGROUND

The syndrome of hemolysis, elevated liver enzymes and low platelet count (HELLP) in pregnant patients has been associated with liver hematoma, right upper quadrant abdominal pain, jaundice, increasing abdominal girth and ascites. A transthoracic approach to repairing a resultant right diaphragmatic hernia has not been described in the literature. We describe a robotic-assisted thoracoscopic technique for repair of this rare and unusual condition.

METHODS

A 56 year-old woman was referred to Thoracic Surgery with a three-month history of worsening right shoulder and right upper quadrant abdominal pain. Computerized tomography (CT) demonstrated focal liver herniation through a small defect within the posterior right diaphragm. She had a history of HELLP syndrome 19 years ago, requiring emergent cesarean section for delivery of triplets, and had been told at the time that her liver appeared abnormal. Due to the location of the hernia she was felt not to be a candidate for a transabdominal repair. She was taken to the operating room for robotic-assisted thoracoscopic primary repair of her right diaphragmatic hernia. buttress.

RESULTS

The patient recovered uneventfully and was discharged home on postoperative day one. She remains well over three years later and repeat imaging has shown no evidence of recurrent hernia. This represents the first case report of a transthoracic repair for a HELLP-related liver hernia.

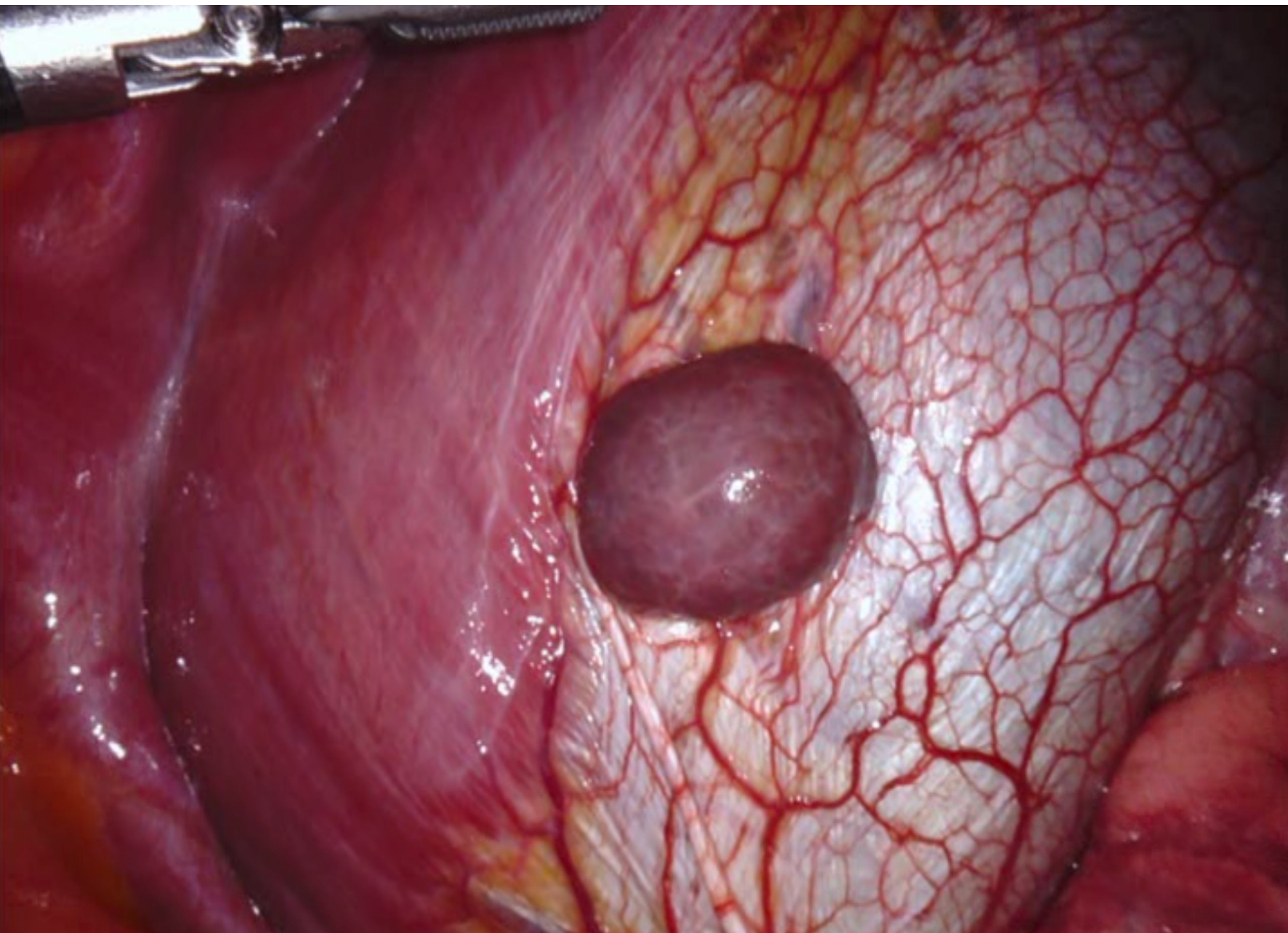
CONCLUSIONS

Acquired or traumatic right-sided diaphragmatic hernias are rare due to the protective effect of the adjacent liver. Focal liver herniation after HELLP-related engorgement and hematoma is an unusual rare entity that may be difficult to repair through a traditional transabdominal route. The robotic platform allows for optimal visualization, careful dissection and repair of such a hernia through a transthoracic approach while minimizing patient morbidity.

INITIAL IMAGING

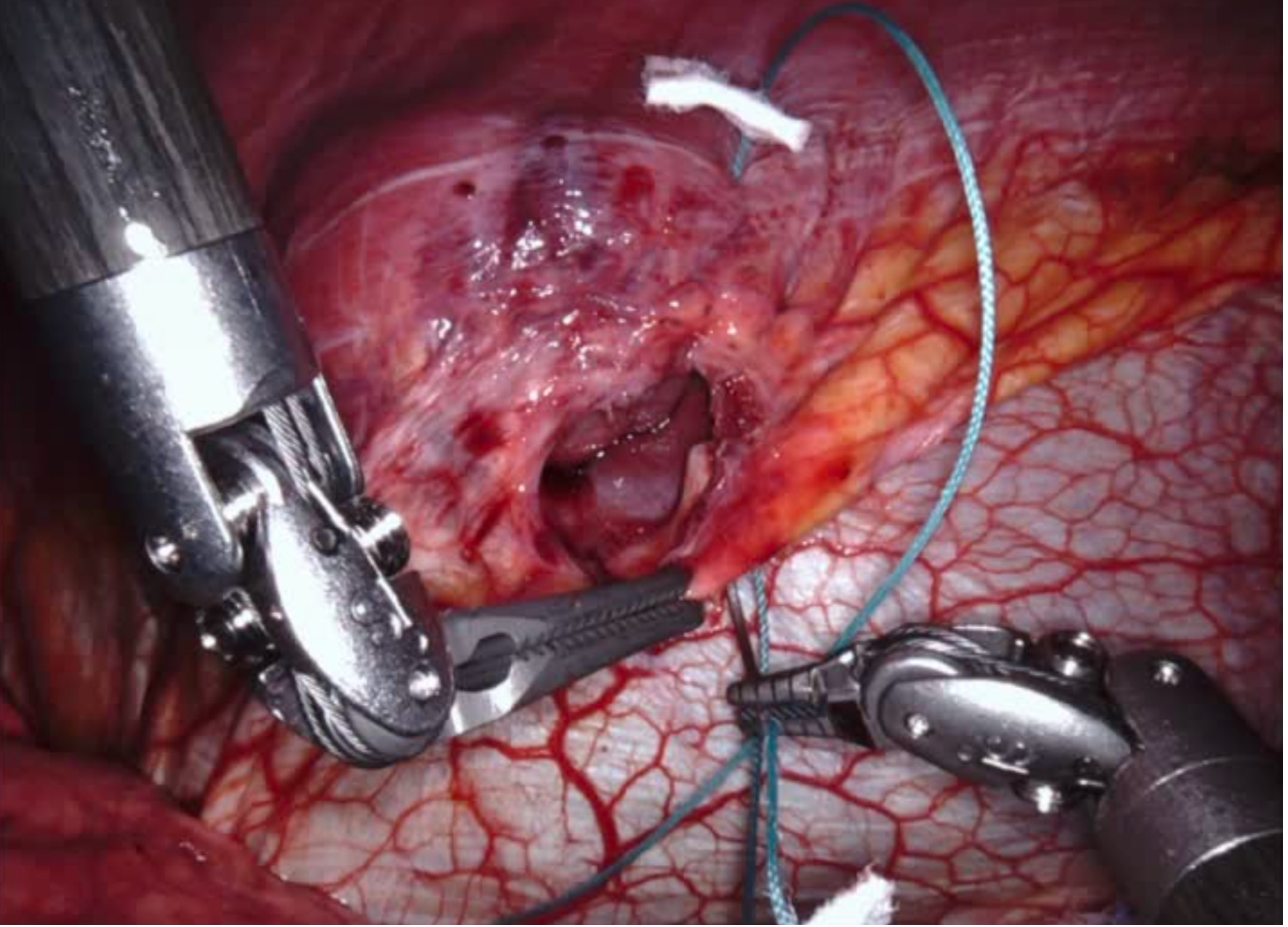


Initial CT image showing focal liver herniation

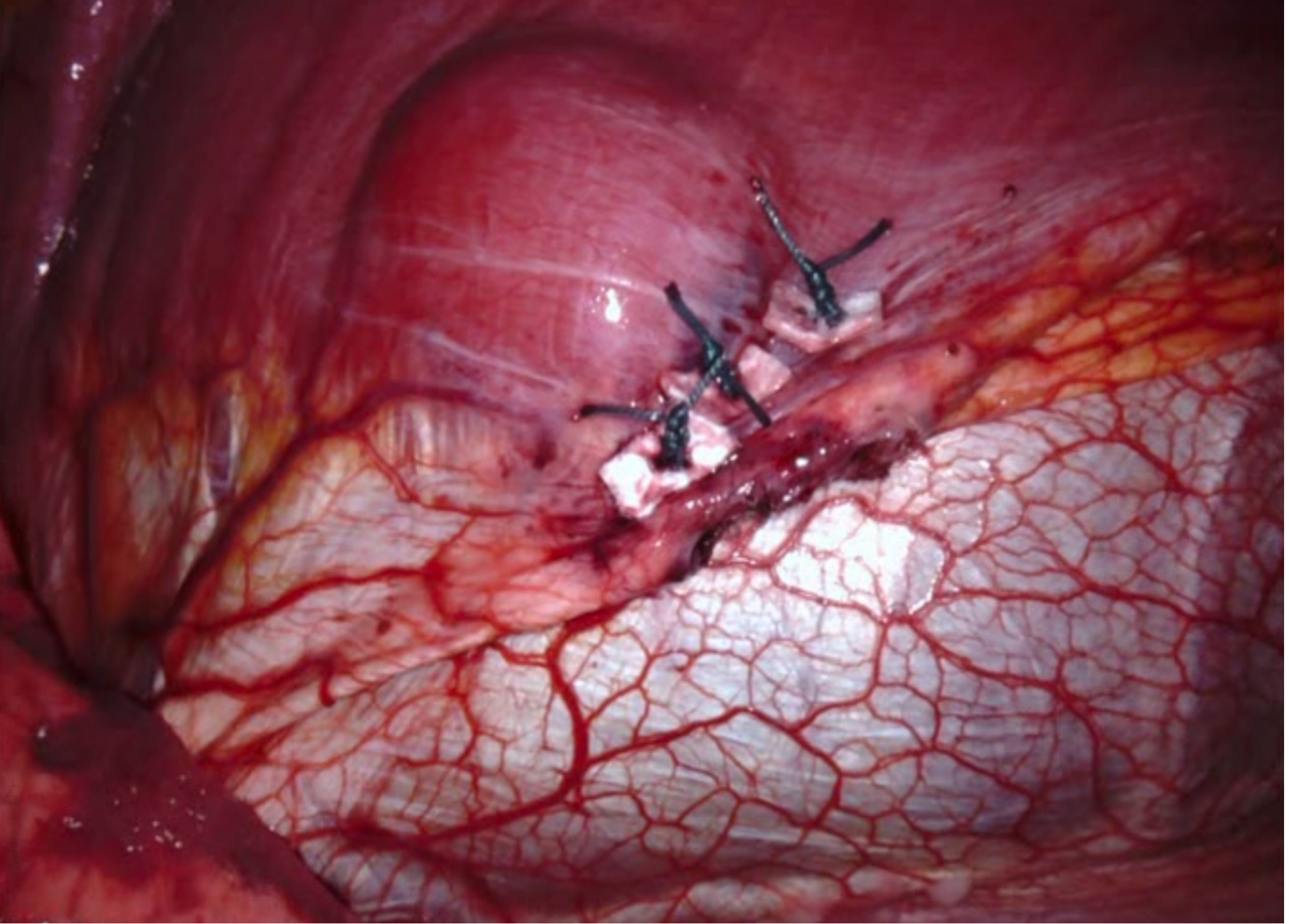


Intraoperative photo demonstrating liver herniation through right diaphragm

TREATMENT IMAGING

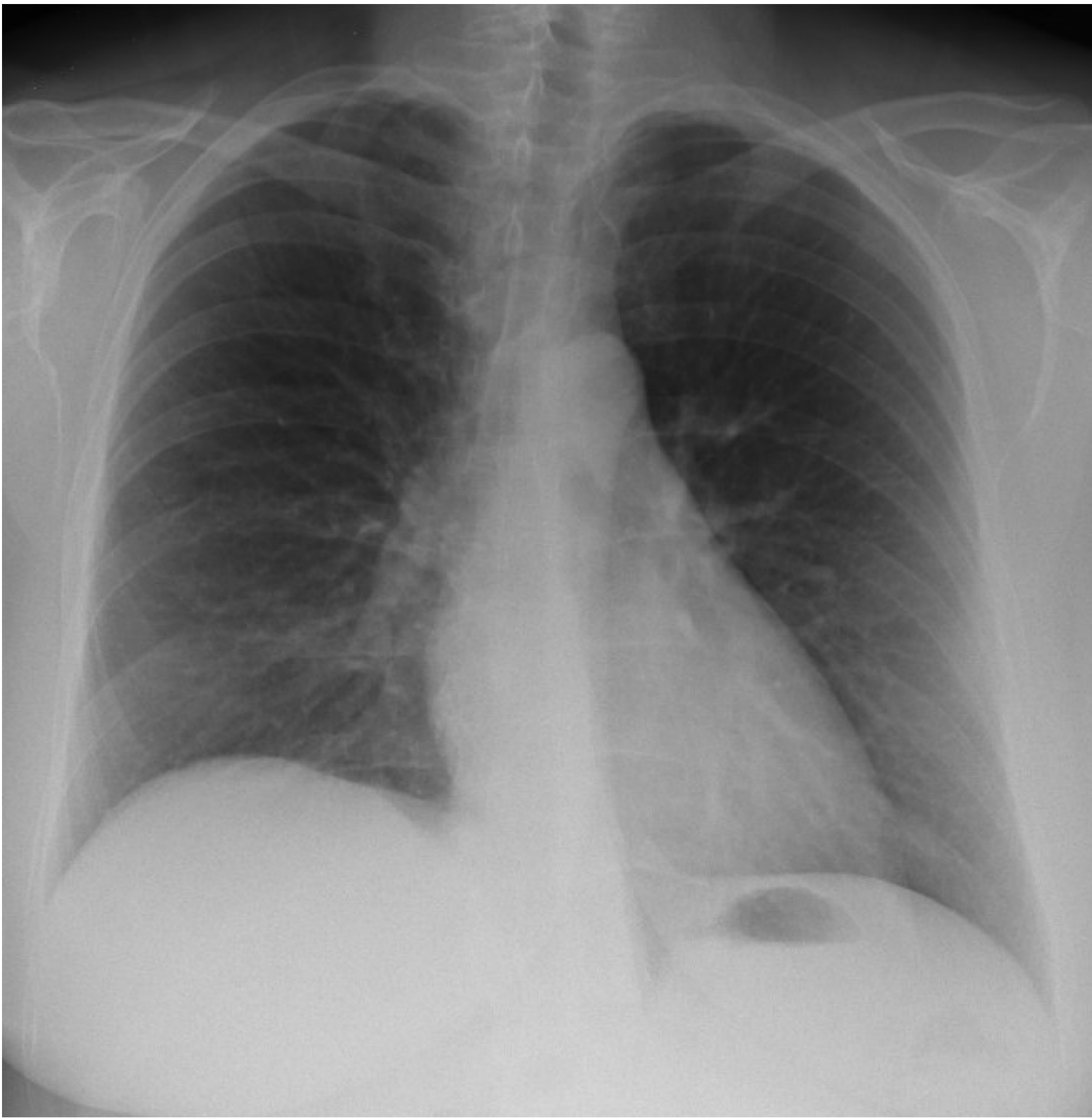


Intraoperative photo demonstrating robotic-assisted thoracoscopic dissection and diaphragm hernia repair using Intuitive da Vinci platform



Intraoperative photo showing completed primary repair of hernia

FOLLOW-UP IMAGING



Postoperative chest x-ray showing normal right diaphragm appearance

REFERENCES

1. Aldemir M et al, Spontaneous liver hematoma and a hepatic rupture in HELLP syndrome: report of two cases. Surg Today 2002; 32:450-3
2. Brosen J et al, Rapidly progressing HELLP syndrome and massive liver destruction in a 22-year-old female pregnant with monochorionic diamniotic gemelli. BMJ Case Rep 2020; 13:e229458
3. Wicke C et al, Subcapsular liver hematoma in HELLP syndrome: evaluation of diagnostic and therapeutic options – a unicenter study. AJOG 2004; 190:106-12
4. McCormick PA et al, Hepatic infarction, hematoma, and rupture in HELLP syndrome: support for a vasospastic hypothesis. J Matern Fetal Neonatal Med 2022; 35:7942-7
5. Ma B et al, Spontaneous hepatic rupture during emergency cesarean section in a patient with HELLP syndrome: a case report and literature review. Clin Exp Obstet Gynecol 2018; 45:292-5
6. Vidarte MFE et al, Hepatic rupture associated with preeclampsia, report of three cases and literature review. J Matern Fetal Neonatal Med 2019; 32:2767-73
7. Ditisheim A et al, Diagnosis and management of HELLP syndrome complicated by liver hematoma. Clin Obstet Gynecol 2017; 60:190-7