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Spontaneous Splenic Laceration Presenting as Stable Angina in the ED

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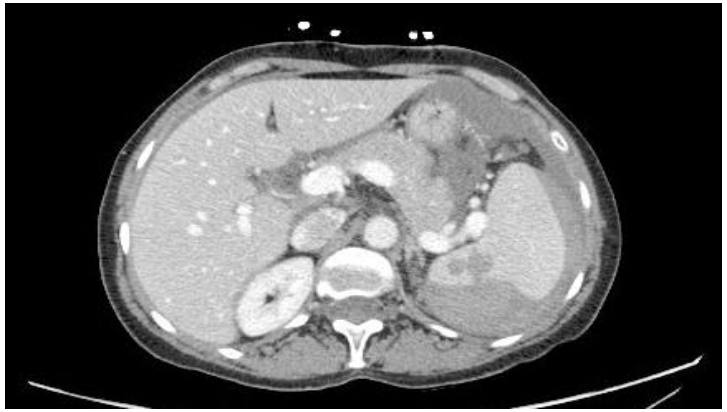
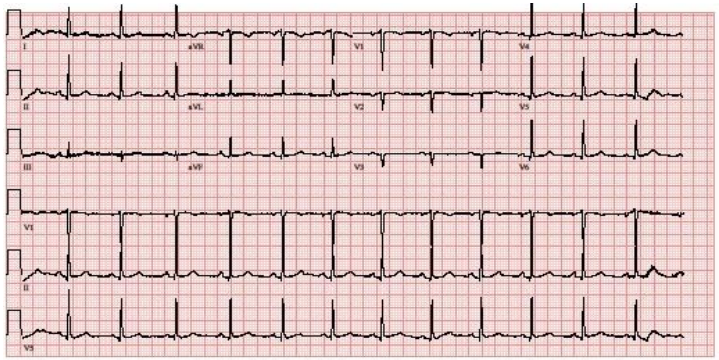
Abstract:
We present a case of a 62-year-old female who presented to the emergency department complaining of classic cardiac chest pain and was ultimately diagnosed with hemoperitoneum due to a splenic laceration sustained during recent colonoscopy. The signs and symptoms between these two diagnoses can be vaguely similar, and a missed diagnosis of either leads to increased morbidity and mortality. To make an appropriate diagnosis, a thorough history and physical examination is imperative. Observation of non-musculoskeletal left shoulder pain in addition to abdominal tenderness should lead the astute clinician down a different path towards diagnosis. Kehr's sign is present in many patients presenting with splenic injury and may be key to diagnosis in an otherwise stable patient.

Case Report

- 62-year-old woman with a history of HTN and LVH presented to the ED for evaluation of chest pain with radiation to the left shoulder
- Vitals within normal limits, EKG NSR at 77 bpm without ischemic changes
- CBC, BMP, troponin I within normal limits
- Nitroglycerin was trialed with profound drop in blood pressure which was easily resuscitated and ultimately showed improvement in patient's chest pain
- 5 hours later, developed abdominal pain at which time CT scan reveal splenic laceration and hemoperitoneum
- Hemoglobin dropped from 13.1 to 9.9 in 7 hours
- Ultimately found to be secondary to routine colonoscopy that was performed 5 days prior to onset of symptoms
- Transferred to tertiary care center and managed medically





Discussion

Routine colonoscopy is generally thought to be a safe procedure with an overall complication rate of 2.8/1,000 procedures[1]. Specifically, Post-colonoscopy splenic laceration occurs with an incidence rate of approximately 1 in 100,000 colonscopies[3]. The mechanism of splenic laceration is thought to occur secondary to tension on the splenocolic ligament as well as intra-abdominal adhesions[6]. This leads to avulsion of the splenic capsule with either subcapsular hematoma formation or active extravasation in severe instances. Similarly, direct trauma to the spleen with the colonoscope has been observed[6]. Data reveals that 78.57% of patients presented within the first 24 hours of splenic injury and, of these, 38.77% presented within the first 6 hours[3]. However, in one study, 21 of 98 patients (21.43%) manifested a delayed presentation 24 hours after colonoscopy and only 4 patients (4%) in this study presented as late as 4 days post-colonscopy[3]. Kehr's sign is defined as left shoulder referred pain due to diaphragmatic irritation, a complaint that can be present in up to 88% of cases of splenic laceration[7]. Irritation of the phrenic nerve under the left hemidiaphragm is transmitted to the C3-C4 nerve roots on the ipsilateral side[8]. Thus, signals are crossed and the sensation that pain is in the left shoulder ensues.

References

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[3] Piccolo, G., Di Vita, M., Cavallaro, A., Zanghì, A., Lo Menzo, E., Cardì, F., & Cappellani, A. (2014). Presentation and management of splenic injury after colonoscopy: a systematic review. *Surgical Laparoscopy Endoscopy & Percutaneous Techniques.*, *24*(2), 95–102. https://doi.org/10.1097/SLE.0b013e3182a83493

Conclusion

Patients presenting to the ED complaining of chest and/or shoulder pain should receive a thorough evaluation, specifically a complete abdominal exam. Referred pain to the chest and shoulder is an insidious symptom that is difficult to evaluate. It is imperative not to anchor a diagnosis on the patient's interpretation of his/her symptoms and to utilize clinical decision-making capacity, vital signs, response to treatment, and continued reevaluation to hone in on the appropriate diagnosis.