Isolated dextrocardia in a patient with adenocarcinoma of the colon: a case report

Faten Almazroa¹, Madawi Alnetaifat¹*, Mohammed Al Abulatief², Rehab Aldawsari¹

ABSTRACT

Background: Dextrocardia is a congenital disorder in which the heart is positioned toward the right side of the chest. The condition is present at birth, but in most cases, it is diagnosed incidentally. In some cases, dextrocardia can be an isolated finding. Other cases are associated with complete transposition of the viscera which is known as situs inversus totalis.

Case Presentation: We present a 57-year-old female with isolated dextrocardia along with colon cancer. She presented to the emergency department with bloody diarrhea and unintentional weight loss. Investigations revealed adenocarcinoma of the colon which the patient was treated for by laparoscopic total colectomy and end ileostomy. The patient was discharged 6 days later with no complications. Two weeks later, she presented to the emergency room with shortness of breath and chest pain. Diagnosis of pulmonary embolism was made and treatment with enoxaparin was started.

Conclusion: This case highlights the importance of adequate preoperative evaluation and how isolated dextrocardia in our patient did not change the surgical outcome.

Keywords: Isolated dextrocardia, colon cancer, laparoscopic total colectomy, case report.

Introduction

Dextrocardia is a congenital disorder in which the heart is positioned toward the right side of the chest. The condition is present at birth, but in most cases, it is diagnosed incidentally. In some cases, dextrocardia can be an isolated finding. While others are associated with complete transposition of the viscera which is known as situs inversus totalis (SIT) [1]. Dextrocardia is a rare condition with studies estimating the incidence to be less than 1% of all pregnancies. There is no evidence of its prevalence in adult population [2]. Although SIT itself is not considered a premalignant condition, several cases in the literature reported patients with SIT having cancer, especially colon cancer.

Case Presentation

A 57-year-old female patient presented to the emergency department with a 2-month history of bloody diarrhea with blood streak and mucus, and unintentional weight loss. She had several comorbidities including diabetes mellitus, hypertension, dyslipidemia, bronchial asthma, and gallbladder adenomyosis. Moreover, she was a known case of dextrocardia with a chest X-ray done in 2007 showing cardiac apex on the right side (Figure 1). Her weight was 64 kg, height was 158 cm, and body mass index of 25.6 making her overweight. Her vitals were elevated with a blood pressure of 148/62 mmHg and a temperature of 36.7°C. Complete blood count revealed anemia with hemoglobin of 86 g/l (Table 1). Carcinoembryonic antigen was not elevated and was found to be 19.9 ng/ml.

She underwent colonoscopy which revealed a rectosigmoid mass. Biopsy was taken and a moderately differentiated invasive adenocarcinoma was found. She also underwent abdominal and pelvic computed tomography (CT) for staging which showed two circumferential colonic thickenings in the sigmoid and hepatic flexure with
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Table 1. The complete blood report of the patient.

<table>
<thead>
<tr>
<th>Variable studied</th>
<th>Value (unit)</th>
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<tbody>
<tr>
<td>Hemoglobin</td>
<td>86 (g/l)</td>
</tr>
<tr>
<td>Hematocrit</td>
<td>0.24 (l/l)</td>
</tr>
<tr>
<td>MCV</td>
<td>58.6 (fl)</td>
</tr>
<tr>
<td>WBC</td>
<td>7.71 10^9 /l</td>
</tr>
<tr>
<td>RDW</td>
<td>20 (%)</td>
</tr>
<tr>
<td>ESR</td>
<td>120 (mm/h)</td>
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</tbody>
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Locoregional lymph nodes in keeping with cancer, T2-early T3N1Mx. Multiple gallbladder polyps without signs of acute cholecystitis were also seen (Figure 2).

Chest CT revealed dextrocardia and few scattered bilateral nodules in the lung (Figures 3 and 4). Laparoscopic total colectomy and end ileostomy were performed with inferior mesenteric artery node dissection with no intraoperative complications. Pathological examination showed adenocarcinoma that is moderately differentiated with negative margins. The number of lymph nodes examined is 37 with 0 involvement of lymph nodes. Pathological staging is T2N0Mx. The patient was discharged 6 days after the operation with no complications. Two weeks later, she presented with shortness of breath and central chest pain. ECG showed diffuse T wave inversion with segment (ST) depression in the inferior and inferolateral leads. She was diagnosed with non-ST-elevation myocardial infarction and followed up by cardiology. CT angiography was done which revealed massive pulmonary embolism with evidence of right heart strain and right lung hypoplasia with abnormal systemic arterial supply. The patient was treated with enoxaparin 60 mg bid and discharged on the same dose. She is following up with oncology for surveillance and suspicious lung micronodules.

Discussion

Although the exact etiology for isolated dextrocardia remains unclear, it does not appear to affect organ function in the absence of other congenital anomalies [1]. Sixteen cases were reported in the literature for patients with SIT and colorectal cancer. However, there are no reported cases describing isolated dextrocardia and colon cancer. Out of all reported cases, nine cases were females and seven were males with age ranging from 41 to 78 years. Histopathologic examination results showed adenocarcinoma in all

Figure 1. Chest X-ray done in 2007 showing the heart in the right side of the chest.

Figure 2. Abdominal CT showing two circumferential colonic thickening in the sigmoid and hepatic flexure.

Figure 3. Chest CT revealed dextrocardia and few scattered bilateral nodules in the lung.
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List of Abbreviations
CT Computed tomography
SIT Situs inversus totalis

Conflict of interests
The authors declare that there is no conflict of interest regarding the publication of this article.

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Consent for publication
Due permission was obtained from the patient to publish the case.

Ethical approval
Ethical approval is not required at our institution to publish a case report.

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References

Conclusion
Isolated dextrocardia is a rare finding in adults with cancer. However, in our case it did not change the surgical management.

Figure 4. Chest CT revealed dextrocardia and few scattered bilateral nodules in the lung.