A large tricuspid valve mass associated with rectal carcinoma

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We describe a case of a large mass attached to the tricuspid valve in a patient with rectal carcinoma with some problematic diagnostic and management issues posed.

Case report

A 65-year-old female was admitted acutely to a surgical ward with rectal bleeding for 2 days, shortness of breath, and fevers with constitutional illness for several weeks. On examination, the patient had fever to 39°C, tachycardia of 100/min, and blood pressure 110/80 mmHg. Cardiovascular examination revealed nailbed splinter haemorrhages, elevated jugular venous pressure (JVP) with abnormal Kussmaul’s sign, and a new 3/6 pansystolic murmur loudest in inspiration at the lower left sternal border.

Lungfields were clear to auscultation but there was heart failure with marked congestion of lower limbs and abdomen. Her liver was enlarged, tender and pulsatile. She was without other significant abdominal findings, masses but rectal examination revealed a fragile bleeding polypoid mass.

Laboratory findings were of a microcytic anaemia, haemoglobin concentration 88 g/L, MCV of 78fL, white blood cell count was 12×10⁹/L with a neutrophil leucocytosis. CRP was 370 mg/L. Urine and eight sets of blood cultures all grew penicillin-sensitive *Streptococcus agalactiae* (MIC<0.025mg/L).
A transthoracic echocardiogram showed a large (5×4 cm), lobulated, mobile mass, partially obstructing the tricuspid valve, prolapsing into the right ventricle during diastole (Figure 1). There was severe 4+ tricuspid regurgitation with systolic flow reversal in the hepatic vein, features of marked elevation of right atrial pressure, and right ventricular systolic function was mildly impaired.

The mass (vegetation vs metastasis) seen in right atrium in the echo four-chamber view had attachment to the septal leaflet of the tricuspid valve (Figure 2).

The patient was treated for native valve *S. agalactiae* endocarditis but without any interval change of the cardiac mass on echo, and with persisting 4+ tricuspid regurgitation and no resolution of heart failure signs, lower limb and abdominal congestion. Rectal cancer staging and grading suggested possibility of cure apart from uncertainty about the cardiac mass. The dilemma was whether to proceed to definitive surgical management of the rectal cancer or the cardiac lesion first.

After discussion, the patient initially underwent cardiac surgery with resection of the tricuspid valve and replacement with a 31 mm Mosaic (Medtronic) porcine heterograft. At surgery, appearance of the mass was thought atypical for endocarditis (Figure 3) microscopic examination and histology showed Gram-positive cocci with no features of malignancy and tissue culture continued to grow *S. agalactiae*.

She underwent subsequent successful surgical management of rectal carcinoma with preoperative radiotherapy. She remains disease-free of cardiac and cancer problems at 12 months’ follow up.

**Discussion**

Cardiac metastases from colorectal cancer is uncommon but has been previously described, usually representing very disseminated advanced disease.
S. agalactiae is an uncommon cause of native tricuspid valve infective endocarditis (IE) in the absence of predisposing conditions such as intravenous drug abuse, diabetes mellitus, alcoholism, or pregnancy. However, the demographic characteristics and outcome of S. agalactiae IE have changed over time.

The overall incidence of S. agalactiae IE is 1.7% with a range of 1.2%–1.9% among hospitalised patients. The median annual prevalence of S. agalactiae IE is 1.3 cases per 1,000,000 inhabitants. In a detailed review with 145 cases of S. agalactiae IE by Sambola et al, the mitral valve was the most frequently involved valve (85%), the least affected valve was tricuspid (11%) and there was a high mortality rate (85%).

S. agalactiae IE is an aggressive disease with a high rate of local and systemic complications. The incidence of emboli is very high (50%) compared with other IEs. Cardiac surgery is usually required because of heart failure and embolism. Another important characteristic of S. agalactiae is that it is uniformly susceptible to penicillin (MIC<0.1µg/ml).

The association between S. agalactiae IE and villous adenoma of the rectum was first reported by Alan et al in their two case reports. It is well known that Streptococcus bovis bacteraemia or IE is associated with colonic villous adenoma or carcinoma. This prompted to screen all patient with IE due to S. bovis with colonoscopy. As far as we know this is the first case report of rectal carcinoma that is associated with S. agalactiae IE. This raises a question of need for routine colonic screening in these cases.

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