

CASE STUDY ANSWERS

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Medical

1. The ECG in Figure 1 shows atrial flutter with 2:1 conduction (atrial rate 280 bpm, ventricular rate 140 bpm).
2. Atrial flutter is an inherently unstable rhythm, which generally is seen to revert to either atrial fibrillation or to sinus rhythm. The clinical significance of atrial flutter is generally due to its association with atrial fibrillation and/or its association with rapid rates of ventricular response.
3. A. Medical therapy differs very little from that for atrial fibrillation:
 - I. Control of ventricular response rate with a beta-blocker, digoxin, or a calcium channel blocker.
 - II. Conversion to sinus rhythm with agents such as the Class IA (procainamide, quinidine), Class IC (flecainide, propafenone), or Class III. (amiodarone, sotalol).B. Direct current cardioversion is the preferred and most effective therapy for most patients. The starting energy can be as low as 50 Joules.
C. Radiofrequency ablation is often curative, with an efficacy as high as 95% for the long-term elimination of atrial flutter. It is usually reserved for patients with the recurrence of atrial flutter.
4. There is clearly risk for thromboembolic disease in patients with atrial flutter. As noted in answer 1, atrial flutter can easily convert to atrial fibrillation, which further increases the risk of thromboembolism, especially in patients with underlying heart disease. Patients older than 65 years with structural heart disease or other cardiovascular conditions such as hypertension should be anticoagulated with coumadin.

Surgical

1. Small bowel obstruction secondary to an infarcted Meckel's diverticulum. A Meckel's diverticulum is the most prevalent congenital abnormality of the gastrointestinal tract occurring in 2% of the population. It is an embryologic derivative of the Vitelline duct due to failure of closure of the intestinal end of the duct. It is located 45-90cm proximal to the ileocecal valve along the antimesenteric border of the ileum. In this case torsion occurred of the Meckel's diverticulum around a fibrous cord between the diverticulum and small bowel mesentery. This resulted in infarction of the Meckel's diverticulum and subsequent bowel obstruction.
2. Management of a symptomatic Meckel's diverticulum is resection. Removal of the diverticulum itself may leave specialized epithelium adjacent to the resection margin. This patient was treated with a short segmental ileal resection containing the infarcted Meckel's diverticulum.
3. Most patients with Meckel's diverticuli are asymptomatic. Approximately 4% become symptomatic at some point during their lifetime. The most common symptoms are pain, bleeding, and ulceration due to specialized epithelium (gastric or pancreatic) in the diverticulum. These symptoms usually present in younger patients. In these cases a Meckel's scan can be useful in confirming the diagnosis. Other symptoms include obstruction, diverticulitis, perforation, and tumors.