

## Case Study Answers

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### *Medical*

1. The EKG in Figure 2 shows QT prolongation.
2. Checking the electrolytes (especially calcium, potassium, and magnesium) and correcting appropriately is the first step. One should look at all the medications the patient is receiving and discontinue any that would prolong QT interval.
3. Of the list of medications the patient is receiving, ciprofloxacin is the only one that can possibly prolong QT, since quinolones have been reported to prolong QT interval. After ciprofloxacin was stopped, the QT interval decreased.
4. Yes. Prolonged QT interval can run in families, and some have a tendency to develop prolonged QT when exposed to certain medications.

### *Surgical*

1. Cholangiocarcinoma or sclerosing cholangitis. Both can appear as single strictures of the common bile duct. Final pathology for the patient in this example revealed primary sclerosing cholangitis. This is an idiopathic stricturing disorder of the extra- and intrahepatic biliary tree. Most often, the strictures are multiple and, despite the name, cholangitis is relatively unusual.
2. In cases of cholangiocarcinoma, the preferred treatment is local excision of the common bile duct with complete removal of the tumor with negative margins assessed intraoperatively, regional lymph node dissection, and, as was in this case, Roux-en-y choledocojejunostomy. Chemotherapy containing 5-FU and radiation are appropriate adjuvant therapy. Five-year survival is only 20%-50% in surgical series but is clearly better with complete microscopic excision of tumor. There is proven medical therapy for primary sclerosing cholangitis. Ursodeoxycholic acid has been used to reduce cholestasis, and systemically delivered antibiotics can be necessary for episodes of cholangitis. Liver transplantation is often the only option for long-term survival.