Case 53 A gastric ulcer

Figure 52.1

Figure 52.1 shows an old specimen resected from the stomach of a 57-year-old publican. He had a long history of epigastric pain, but was reluctant to attend his family doctor for fear of being lectured about his smoking and drinking habits. Nevertheless he had slowly been losing weight, with the pain being exacerbated on eating. He had tried antacids but they gave only short-term relief, and his sleep was regularly disturbed by the pain.

What is the most likely diagnosis?

This is a gastric ulcer. There is no thickening or heaping up of the edges so it is likely to be a benign ulcer.

Figure 52.2 Barium meal illustrating the niche of the gastric ulcer on the lesser curve (arrowed).

This ulcer was diagnosed on a barium meal (see Fig. 52.2) and is indicated on the lesser curve of the stomach by an arrow. How would a patient with these symptoms be investigated today and why?

Endoscopy is the investigation of choice, and would have diagnosed the presence of this ulcer and enabled biopsies to be taken to look for evidence of malignancy.

Gastrectomy for peptic ulcers used to be commonplace, but they are infrequently performed nowadays. It was once believed that peptic ulcers were related to excess acid production in the stomach. What is now known to be the aetiology?

It is now recognized that the commonest cause of peptic ulceration is infection with *Helicobacter pylori*, an organism that was not recognized until the pioneering work by Marshall and Warren* in Australia in 1979. Treatment is with antibiotics, and not surgery.

How is infection with *Helicobacter pylori* diagnosed?

The organism possesses a urease enzyme that converts urea into ammonia and carbon dioxide. This is the basis of two diagnostic tests. In the first a biopsy of the stomach is placed in a solution of urea together with a pH indicator; a change to alkali pH gives a rapid confirmation of the diagnosis. Alternatively the patient is given 14C-labelled urea to drink. The *Helicobacter* breaks down the urea liberating $14CO_2$ which is exhaled and can be detected on the breath. Lastly, serum *Helicobacter* antibodies indicate past infection.

*Barry Marshall (b. 1951), gastroenterologist, Royal Perth Hospital, Australia; J. Robin Warren (b. 1937), pathologist, Royal Perth Hospital. They won a Nobel Prize for their work in 2005.