**Case:** A 44-year-old woman presented to the emergency department with a 1-day history of constant abdominal pain and vomiting. The pain came on suddenly, shortly after eating her evening meal. This was followed by intermittent bouts of bilious vomiting. She has diabetes and is concerned about her blood sugars as she has not been able to eat a normal diet since the pain started. Her bowels have opened normally and she has no urinary symptoms.The patient is febrile with a temperature of 38°C and a pulse rate of 116/min. She is not clinically jaundiced. On examination of the abdomen, she is found to have tenderness in the right upper quadrant, which is worsened by placing two fingers beneath the tip of the ninth costal cartilage during inspiration. A tender mass is palpable in the right upper quadrant. The urine is clear and rectal examination is normal.

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| **INVESTIGATIONS** |
| **Results** | **Normal** |
| Haemoglobin (Hb) 11.7 g/dLMean cell volume 81 fLWhite cell count 18 × 109/LPlatelets 312 × 109/LSodium 135 mmol/LPotassium 4.4 mmol/LUrea 4 mmol/LCreatinine 69 μmol/LAmylase 69 IU/dLAspartate transaminase (AST) 67 IU/dLAlkaline phosphatase (ALP) 76 IU/dLGamma-glutamyl transferase (GGT) 50 IU/dLAlbumin 42 g/LBilirubin 25 mmol/LBlood glucose 27 mmol/L | 11.5–16.0 g/dL76–96 fL4.0–11.0 × 109/L150–400 × 109/L135–145 mmol/L3.5–5.0 mmol/L2.5–6.7 mmol/L44–80 μmol/L0–100 IU/dL5–35 IU/L35–110 IU/L11–51 IU/L35–50 g/L3–17 mmol/L3.5–5.5 mmol/L |

**Questions:**

• Whose sign is elicited on examination of the abdomen?

• What is the most likely diagnosis?

• What is your first-line treatment?

• What would you prescribe to treat the high blood glucose?

• What specific complication is this patient at risk of ?

**ANSWER:**

Murphy’s sign has been demonstrated, which is described as tenderness under the tip of the ninth costal cartilage, which catches on inspiration. A palpable mass, caused by inflammation and adherent omentum, is present in up to 40 per cent of patients with cholecystitis. An abdominal ultrasound should be requested, which should confirm a thickened gallbladder wall with surrounding free fluid, supporting the diagnosis. The majority of episodes of acute cholecystitis settle with analgesia and antibiotics. This patient’s diabetes should be controlled with an insulin infusion, until she restarts a normal diet. Many centers are now performing early cholecystectomy, especially for patients with recurrent episodes, or if the symptoms fail to settle despite conservative treatment. If this is not appropriate, then elective cholecystectomy can be carried out at an interval of approximately 6 weeks, after the inflammation has settled. Acute cholecystitis can lead to a build-up of infected bile within the gallbladder lumen, resulting in an empyema. The gallbladder can also become gangrenous, leading to perforation. Patients are at increased risk if they are diabetic, immunosuppressed, obese or have a haemoglobinopathy. If patients are elderly or have significant comorbidities, initial decompression may be accomplished under radiographic guidance (percutaneous cholecystostomy). These patients should be managed aggressively with antibiotics and early decompression, as the resulting sepsis can be life-threatening.

**KEY POINT:**

• Early cholecystectomy is now routinely practiced in the management of acute cholecystitis.