**Scenario:**

A 45-year-old woman presents to the emergency department with a chief complaint of right upper quadrant abdominal pain. The pain is sharp and stabbing, and it has been present for several hours. She also reports nausea and vomiting. She has no fever or diarrhea.

On physical examination, the patient is tender in the right upper quadrant abdomen. Murphy's sign is positive, which means that the patient experiences pain when her right upper quadrant abdomen is palpated while she takes a deep breath.

The doctor suspects that the patient may have gallstones, but he also considers other possible diagnoses, such as pancreatitis, appendicitis, hepatitis, and kidney stones.

To rule out pancreatitis, the doctor orders a blood test to check for elevated levels of pancreatic enzymes. The blood test results are normal.

To rule out appendicitis, the doctor performs a pelvic exam and orders an ultrasound of the abdomen and pelvis. The pelvic exam is normal, and the ultrasound does not show any signs of appendicitis.

To rule out hepatitis, the doctor orders blood tests to check for elevated liver enzymes and antibodies to hepatitis viruses. The blood test results are normal.

To rule out kidney stones, the doctor orders a urine test and a CT scan of the abdomen and pelvis. The urine test does not show any signs of blood or infection. The CT scan does not show any kidney stones.

Based on the patient's symptoms, physical exam, and test results, the doctor concludes that the patient has gallstones.

**How the doctor rejects other suspected diseases:**

* **Pancreatitis:** The patient's blood test results were normal, and she did not have any other signs of pancreatitis, such as fever or tenderness in the upper left quadrant abdomen.
* **Appendicitis:** The patient's pelvic exam and ultrasound were normal, and she did not have any other signs of appendicitis, such as fever or right lower quadrant abdominal tenderness.
* **Hepatitis:** The patient's blood test results were normal, and she did not have any other signs of hepatitis, such as jaundice or dark urine.
* **Kidney stones:** The patient's urine test and CT scan were normal, and she did not have any other signs of kidney stones, such as blood in the urine or fever.

**How the doctor reaches to diagnosis of gallstone:**

The patient's symptoms and physical exam findings were highly suggestive of gallstones. She had right upper quadrant abdominal pain, Murphy's sign, and tenderness in the right upper quadrant abdomen. She also had nausea and vomiting, which are common symptoms of gallstones.

The doctor ruled out other possible diagnoses, such as pancreatitis, appendicitis, hepatitis, and kidney stones, by performing a physical exam and ordering appropriate tests.

Based on the patient's symptoms, physical exam findings, and test results, the doctor concluded that the patient had gallstones.