

An Impacted Stone



HELEN MYINT



- About 1 in 10 New Zealanders have gallstones
- Gall stones are the most common abdominal reason for admission to hospital in developed countries

Risk Factors

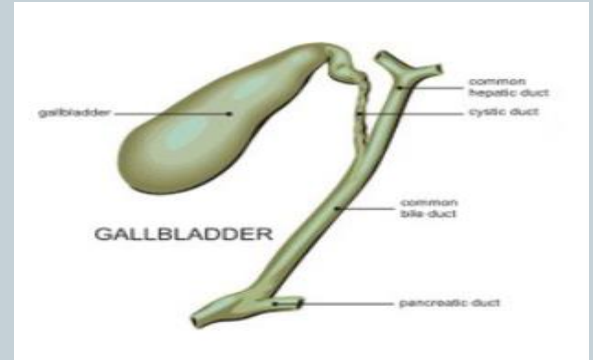


- Fat
- Forty
- Fertile
- Female
- Fair

Gall bladder



- Primary function is to store bile
- Bile helps with fat digestion and absorption
- Gall bladder contraction is stimulated by a hormone CCK



Bile



- 70% bile salts
(mainly cholic and chenodeoxycholic acids)
- 22% phospholipids (lecithin)
- 4% cholesterol
- 3% proteins
- 0.3% bilirubin.

Types



White stones



- Cholesterol or cholesterol predominant (mixed) stones account for majority of the gall stones
- They form when there is super saturation of bile with cholesterol.
- Formation of stones is further aided by decreased gallbladder motility.

Brown stones



- Brown pigment stones are formed within the intrahepatic and extrahepatic bile ducts as well as the gall bladder.
- They form as a result of stasis and infection within the biliary system
- converts soluble conjugated bilirubin back to the insoluble unconjugated state leading to the formation of soft, earthy, brown stones.

Black stones



- Black pigment stones consist of 70% calcium bilirubinate and are more common in patients with haemolytic diseases (sickle cell anaemia, hereditary spherocytosis, thalassaemia) and cirrhosis.

Asymptomatic



When we get involved



Case 1



- 70 M
- Dentist

- Abdominal pain post meals
- Jaundice
- USS shows multiple Gallstones and large CBD stone

ERCP



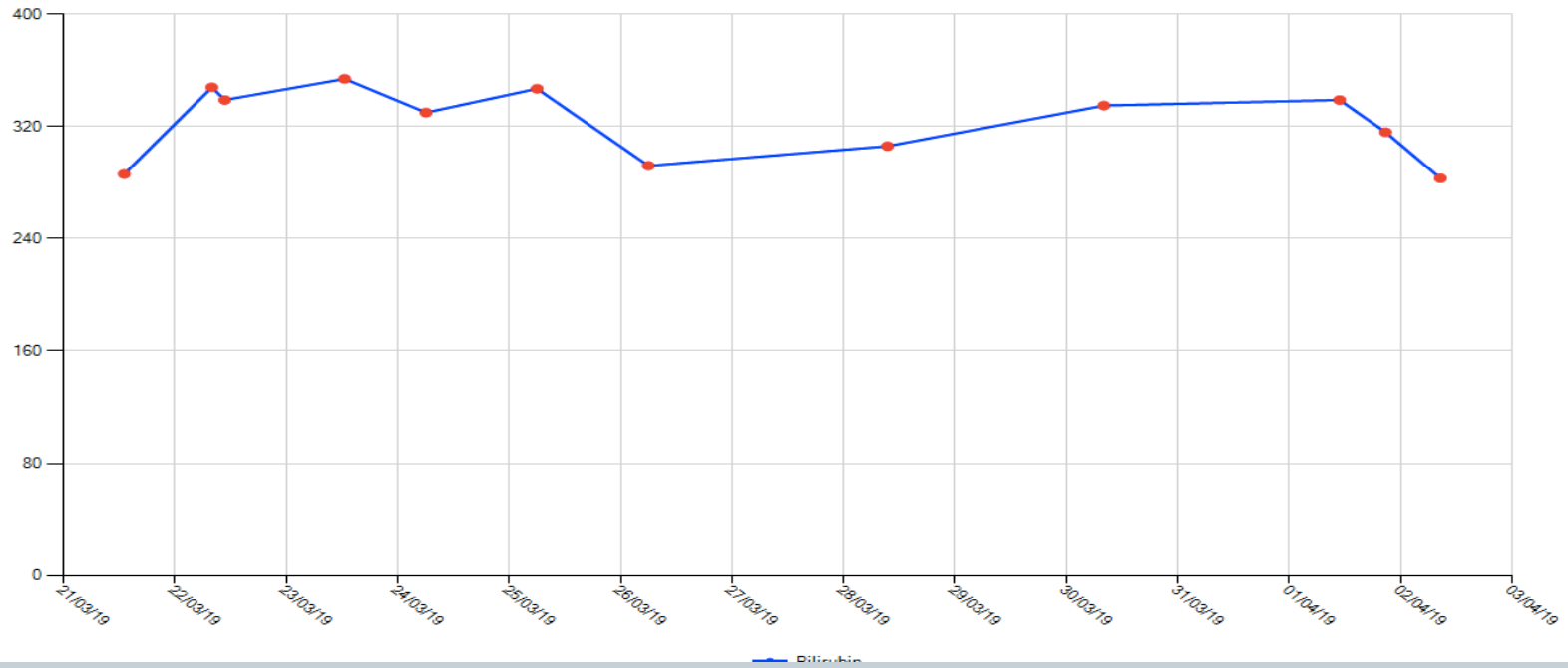
Case 1



Bilirubin



Chemistry - Serum/Plasma 21/03/19 13:05 - 02/04/19 08:34



SPY Glass



Case 2



- 44 F
- Single episode of cholecystitis 2016
- 7 weeks pregnant...

Case 2

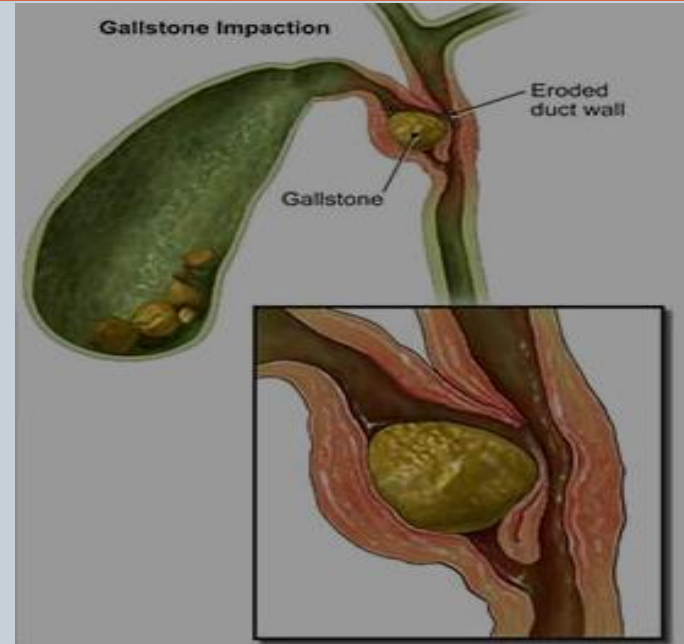


- Represents 2019 with recurrent abdominal pain
- USS - Impacted stone at the Cystic duct with CHD dilatation and CHD stones
- MRI to further characterise

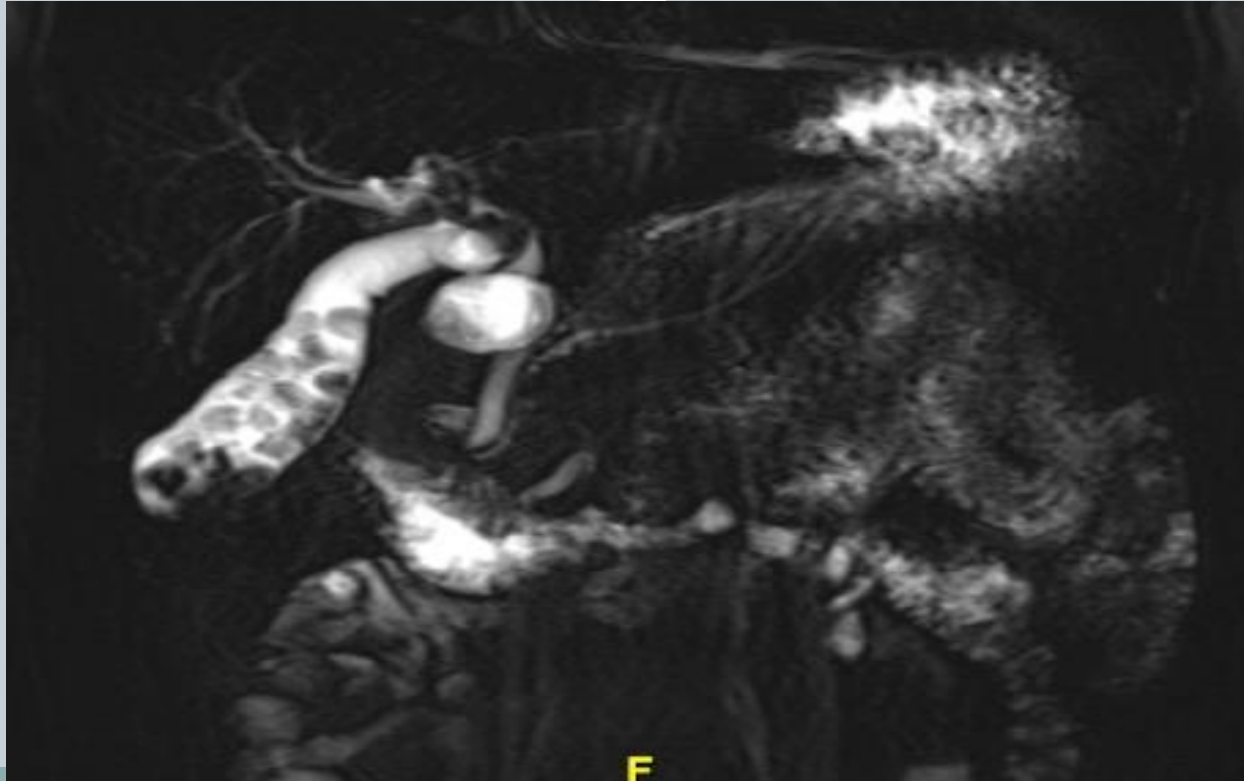
Mirizzi's Syndrome



- Common hepatic duct obstruction caused by extrinsic compression from an impacted stone in the cystic duct
- 5%



Case 2



Case 2



Progress

- ERCP #1– stent
- Represented with cholangitis
- Subsequently developed Liver abscess
- IV AB 6 weeks

Case 3

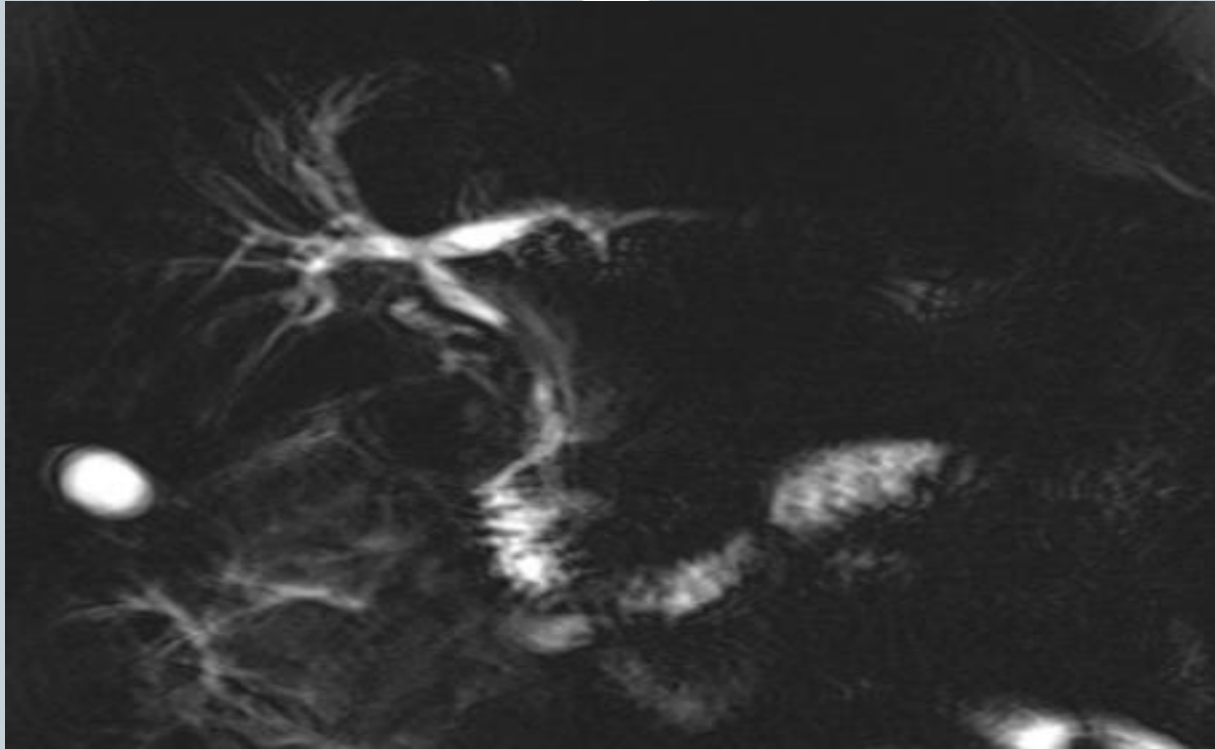


71 Male

- Australian
- Jehovah's witness

- Traumatic Brain injury (limited mental capacity)
- Limited history
- Deranged LFTs

MRI



Outpatient



- ERCP referral – Stent insertion
- EPOA
- GA assessment given other co-morbidities
 - Type 2 DM
 - Obesity
 - OSA
 - IHD +CHF

Symptoms

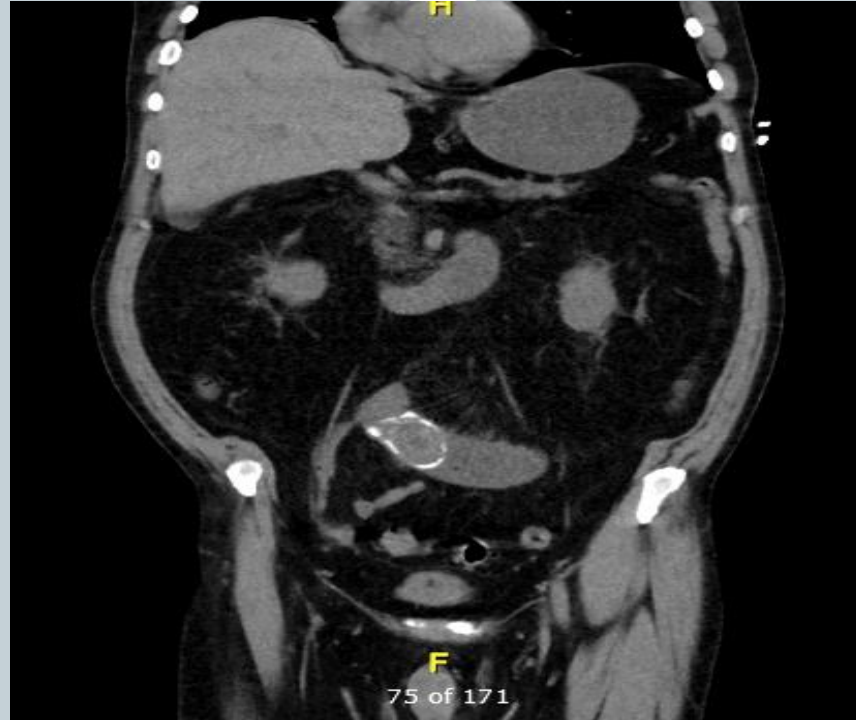


- Nausea and Vomiting
- Abdomen was distended
- Severe abdominal pain

AXR



CT Abdo/Pelvis – Oral/IV contrast





- Mini Laparoscopy and removal of gall stone
- Did not remove gall bladder or repair the fistula

Gall Stone Ileus



- Peri-cholecystic inflammation
- Adhesion between biliary and enteric system
- Pressure necrosis against gall stone and the gallbladder wall cause erosion
- Erosion leads to a tract (fistula)



- How big a stone90% >2cm
- Usually starts as sub-acute obstruction

- Most frequently gets lodged in
 - **ileum**
 - Jejunum
 - Stomach

Bouveret's Syndrome



- **Definition:** Gastric Outlet obstruction due to gall stone obstructing the duodenum
 - Cholecystoduodenal fistula
 - Choledochoduodenal fistula

Management



- Primarily Surgical
- Endoscopic removal
 - Electrohydraulic lithotripsy or obstructing stone
 - Baskets/ snares/nets



