



# **“I feel like I am pregnant again”: Unusual case of ascites**

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## First presentation

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- 46 year old lady, presented with 1 month history of increasing abdominal distension
- She stated that she has a past history of right breast cancer, treated with radiotherapy 4 weeks ago.
- No documentation of her treatment was found.



## First presentation

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- Associated symptoms of mild abdominal pain, generalised with no exacerbating or relieving factors.
- Anorexia, but no loss of weight.
- Lethargy.



## First presentation

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- Patient admitted to 2-6 glasses of wine per night.
- She admitted to smoke 15 cigarettes per day.
- She lived with her mother and brother

# Definition of a glass

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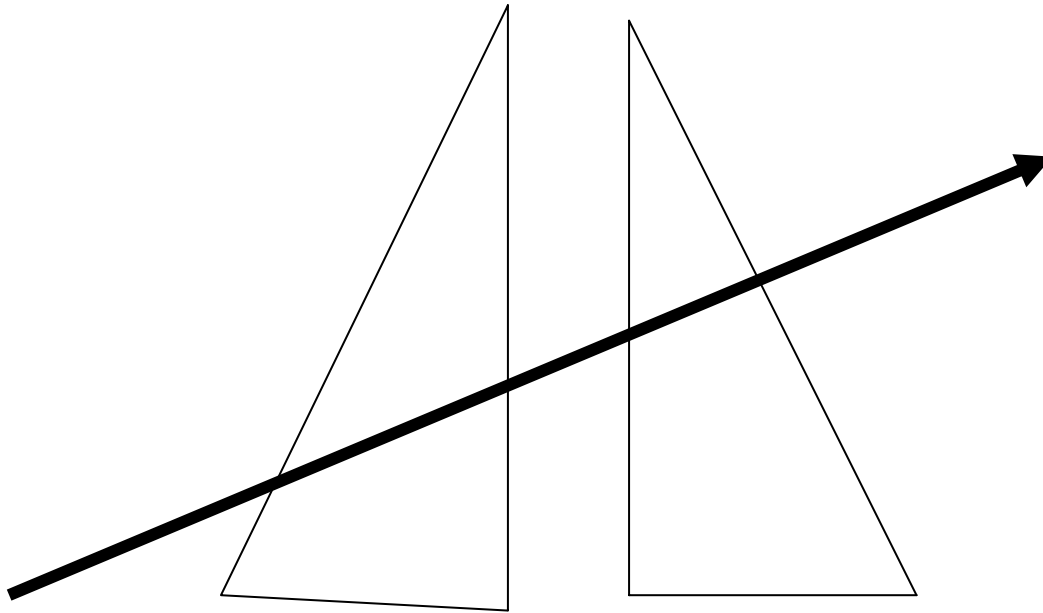




## First presentation

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- Normal haemodynamic parameters
- Very distended abdomen
- Prominent abdominal veins and shifting dullness
- Mildly tender liver edge
- 2 HS + nil





## Impression

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- Liver disease ? 2<sup>nd</sup> to alcohol abuse or metastatic disease
- Blood tests
- CT abdomen was organised



## First presentation

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- Patient self-discharged.
- CT organised but patient refused to have CT.
- She was not willing to accept medical advise at that moment.



## Follow up

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- Outpatient CT scan to be organised
- Blood tests should include chronic liver disease aetiologies and complications
- Outpatient clinic and discuss with her radiation oncologists.



10 days later

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## Second presentation

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- 46 year old lady, presented with a history of 4 weeks of increasing abdominal distension and shortness of breath for the last few days
- She could not mobilise at all due to abdominal pain and distension
- 4 weeks ago, had radiotherapy for breast cancer



## Second presentation

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- She completely denied alcohol intake.
- She was happy for admission for further investigations
- CT abdomen organised → significant ascites, small right sided pleural effusion, multiple fluid filled cysts in the pancreas



## Blood tests results

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- Alb = **19**
- Alp = **177**
- ALT = 15
- GGT = **324**
- Tbili = 21
- Hb = 125
- MCV = **107**
- WCC = 9.9
- Neut = 7.1
- Platelet = 380
- INR = **1.2**
- Urea = 2.3
- AFP = 5.6
- Creat = 99



# Parecentesis

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- Alb = 5
- Leucocytes: scanty
- Organisms: *staphylococcus aureus* and *S. epidermidis*
- WCC = 90



Almost normal LFT, for admission  
under general medicine



# General medicine ward round

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Similar history and examination



## Morning ward round

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- Impression:
  - Pancreatic cysts
  - Alb = 19
- Plan: gastro consult and take over care
- Diuretics, spironolactone 25mg daily
- Amylase, lipase
- Serology for viral hepatitis



# Gastroenterology

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- Consistent with alcoholic liver disease with portal hypertensive ascites
- Therapeutic paracentesis
- Diuretics, 100mg of spironolactone and 40mg of frusemide
- Vitamin replacement
- Psychiatric referral



## Blood tests

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- Amylase = 335 (serum)
- Lipase = 251 (serum)
- Amylase in the ascitic fluid of 1561, almost 5 times that of serum.



SAAG of 15g/L

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But amylase > 1000 and ratio  
of ~5.



## CT report

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- The distal pancreatic body and the pancreatic tail contains at least four cysts, the largest of which measures 54mm diameter.
- There is no calcification or atrophy, but the pancreatic duct is mildly prominent (4mm) in the neck region.
- Likely to be pseudocysts.



# Diagnosis of pancreatic ascites

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## Surgical consult

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- Patient seen 2 days later.
- Patient had no idea of what is going on? Would like to go home.
- Will discuss with consultant



## Gastroenterology grand round

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- Endoscopic ultrasound to further investigate pseudo-cysts
- Continue on diuretics (given the SAAG of  $> 11$  g/L)
- Try octreotide



## Surgical consult

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- ? Gallstones or chronic pancreatitis
- Abdominal ultrasound
- ? Peritoneal-venous shunt
- No surgical intervention at present given patient's background of alcohol intake
- Suggest conservative management



# Where to go from here?

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Requiring 2<sup>nd</sup> daily therapeutic paracentesis



## Conservative management

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- Endoscopic ultrasound: pseudocysts most likely.
- Endoscopic retrograde cholangio-pancreatogram and pancreatic stent
  - Pancreatic leak at towards pancreatic tail
- Covers with antibiotics



# Progress

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- Temperature went up to 38°C
- ? Infected cysts or infected ascitic fluid.
- CT abdomen and meropenam
  - New pseudocyst, no abscesses



## Further discussion with the surgeon

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- Surgical consult
  - High risk of surgery
  - Should stop drinking alcohol completely.
  - Continue with conservative management



## Progress

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- Candida grew from ascitic fluid
- Infectious diseases team suggested Caspofungin as anti-fungal agent.
- Meropenam for 10 days



## Progress

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- 10 days of intravenous carbapenam and anti-fungal
- 1 month of augmentin duo forte and oral anti-fungal medication
- Discharge home after 1 month in hospital.



## Progress

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- 2 week follow up, stop octreotide
- 1 month follow up, stop antibiotics and anti-fungal, stop diuretics
- Pancreatic stent removal at that time
- 3 months follow up, well, stop drinking completely.



## In summary

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- 46 year old lady, who presented with pancreatic ascites, in the background of heavy alcohol abuse. As surgical treatment is not available, patient was treated with pancreatic stenting and octreotide. This treatment has produced positive outcome.



# Discussion

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- **What are the initial investigations for ascites? (diagnostic value of SAAG)**
- **When to investigate for unusual causes of ascites?**
- **The role of octreotide in the management of pancreatic ascites.**
- **The role of endoscopic retrograde cholangio-pancreatogram versus surgery in the management of pancreatic ascites.**
- **Should patient's attitude and behaviour towards self-care affect physician's decision making process and management strategy?**



# Question 1: initial investigation of ascites

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# Ascites

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- Ascites is the pathological increase in fluid within the peritoneal cavity and the most common cause is portal hypertension.
- Blood tests: aetiology, complications, bone marrow, renal and liver synthetic functions.
- One of the most important investigations for newly diagnosed ascites is paracentesis.



# Paracentesis

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- McGibbon et al. An evidence-based manual for abdominal paracentesis. Dig Dis Sci (2007): 52: 3307-3315



# When should patient have paracentesis?

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- New-onset ascites
- Hospitalised for ascites
- Ascites with any of the following:
  - Fever
  - Abdominal pain
  - Leukocytosis
  - Increasing volume
  - Encephalopathy
  - Deteriorating liver function
  - Renal failure



# Ascitic fluid investigations

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- Routine
  - Cell count and differential cell count
  - Albumin level



## Cell count and SBP

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- Current diagnostic standard is polymorphonuclear cell count of  $\geq 250$  cells/mm<sup>3</sup> has a sensitivity of 80-100% and specificity of 86-100% for spontaneous bacterial peritonitis.
- This should be an urgent test

Rimola et al. J. Hepatol 2000: **32**; 142-153.



## Serum ascitic albumin gradient.

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- SAAG is the absolute difference between the serum albumin and ascitic albumin level.
- It is used to distinguish between sinusoidal portal hypertension and non-portal hypertensive causes of ascites (SAAG  $\geq 11$ g/L is indicative of portal hypertensive ascites).



## Accuracy of SAAG

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- Accuracy of 97% in identifying portal hypertensive ascites.
- This is compared with 56% using transudate and exudate criteria.

Runyon et al. Ann Intern Med. 1992: **117**:  
215-220.



## Question 2: other investigations

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## Other tests

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- Gram stain and culture
- Glucose and LDH
- Amylase
- Triglyceride
- Cytology



## Gram stain and culture

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- Gram stain is only positive in 7-10% of patients with spontaneous bacterial peritonitis.
- Ascitic fluid cultures, however, has a positive rate of 50% in normal specimen container and 80% in blood culture bottles.

Siersema et al, J. Clin. Microbiol. 1992: **30**: 667-669.



# Glucose and lactose dehydrogenase

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Glucose and LDH are rarely useful in  
ascitic fluid analysis.



## Amylase level

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- This is important in patients with suspected pancreatic disease, trauma or pancreatic abnormalities on CT.
- The ascitic amylase level is often  $> 1000$  IU/L, the ratio might increase up to 6.

Runyon. J. Clin. Gastroenterol. 1987: **9**: 172-174.



## Triglyceride level

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- The presence of milky-coloured ascitic fluid suggest chylous ascites.
- Chylous ascites is defined by triglyceride level of  $> 200\text{mg/dL}$ .
- Ascitic fluid cholesterol level of  $> 48\text{mg/dL}$  has an accuracy of 92% for distinguishing malignant from cirrhotic ascites.

Cardenas et al. Am J Gasntenterol. 2002: **97**: 1896-1900.



# Cytology

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- Sensitivity for malignancy is 57-67%.
- Sensitivity for peritoneal carcinomatosis is 97%, while sensitivity for other malignancies (hepatocellular carcinoma, metastasis, lymphoma) is around 10%.

DiBonito et al. Acta Cytol. 1993: **37**: 483-488.

Runyon et al. Hepatology. 1988: **8**: 1104-1109.



## In summary

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- Culture: if suspicious of infection, in blood culture bottle.
- Amylase: trauma and pancreatic disease
- Triglyceride: milky colour
- Cytology: sensitive for peritoneal carcinomatosis.
- Glucose and LDH: rarely useful



## Question 3: Octreotide

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# Octreotide

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- Somatostatin analogue
- Somatostatin is found in hypothalamus, stomach, gastrointestinal tract and pancreas.
- Somatostatin is synthesised as a pro-hormone, which undergoes tissue-specific processing to produce either S-14 (neuro-peptide) or S-28 forms (Circulating)



# Octreotide

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- At least five subtypes of somatostatin receptors have been described.
- Octreotide has high affinity for subtype 2, less for subtype 5, 100 times less for subtype 3 and very low affinity for subtype 1 and 4.

Beglinger and Drewe, *Digestion* 1999: 60 (s2): 2-8.



## Therapeutic use in pancreatic ascites

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- Octreotide has been used to treat pancreatic ascites.
- The effect is probably due to the inhibitory effect on exocrine pancreatic function.
- There are only very few case reports on its use.

Grauer and Barkin. Digestion. 1994: 55 (s1): 24-28.



# Question 4: ERCP versus surgery

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# Management of pancreatic ascites

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- Treatment of pancreatic ascites is not well established.
- Diet, somatostatin analog and large volume paracentesis have not been very successful.
- Surgery is required in 50% of cases, mortality is around 25%.

Kozarek et al. Am J Surg. 1994; **168**: 223-226.



# ERCP

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- More recently, endoscopic pancreatic duct stenting has been attempted.
- 8 cases of pancreatic ascites were reported, in addition to 8 cases reported in the literature, which showed good results.
- It has been suggested that ERCP with pancreatic stenting should be first line treatment.

Bracher et al. Gastrointest Endosc. 1999;**49**:710-715.



## Surgery versus ERCP.

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- Review of 139 cases reported in the literature.
- The only treatments proven to be effective: Surgery and pancreatic stenting.
- Surgery seems to have better outcome but only few cases of ERCP had been reported.

Gomez-Cerezo et al. Am J Gastroenterol. 2003; **98**:568-577.



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## Question 5: Impact of characteristics of patients on treatment



# Clinical decision making

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- Do patient characteristics, eg. socio-economic class, self-care behaviors affect clinical management decision? And ultimately outcomes.



## Impact of patients on mortality.

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- Patients diagnosed with breast cancer between 1980 and 1989 in the Netherlands were investigated
- There is a small mortality difference dependent on socio-economic differences.

Schrijvers et al. Eur J Cancer. 1995; **31**: 1660-4.



## Patient and diagnosis

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- Qualitative study from Yale University
- Semi-structured interview, analysed using thematic analysis
- A total of 18 physicians were interviewed.

Bernheim et al. Ann Fam Med. 2008; 6: 53-59.



# Patient and diagnosis

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- Patient characteristics affected some physicians significantly:
  - “ I need to understand where they are and how to fit their mold to help them come up with the best possible outcome”



## Theoretical versus practical

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- “I see the CEOs and then I see the neighborhood patients. And really, it is invisible to me. They get the exact same approach and treatment”
- But later described changing management because of patient’s status.



## It is a balancing act.

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- Standards of care
- Ethical consideration to provide care
- Personal and ontological factors
- Public disclosure of performance
- Patient's interests (perceived interests)



## Patient centred care

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- Surveys study of diabetic patients
- Perceived facilitation of patient involvement in decision making increases patient satisfaction in their care, for patients with low socio-economic status.

Golin et al. J Gen Intern Med. 2002: **17**: 857-866.

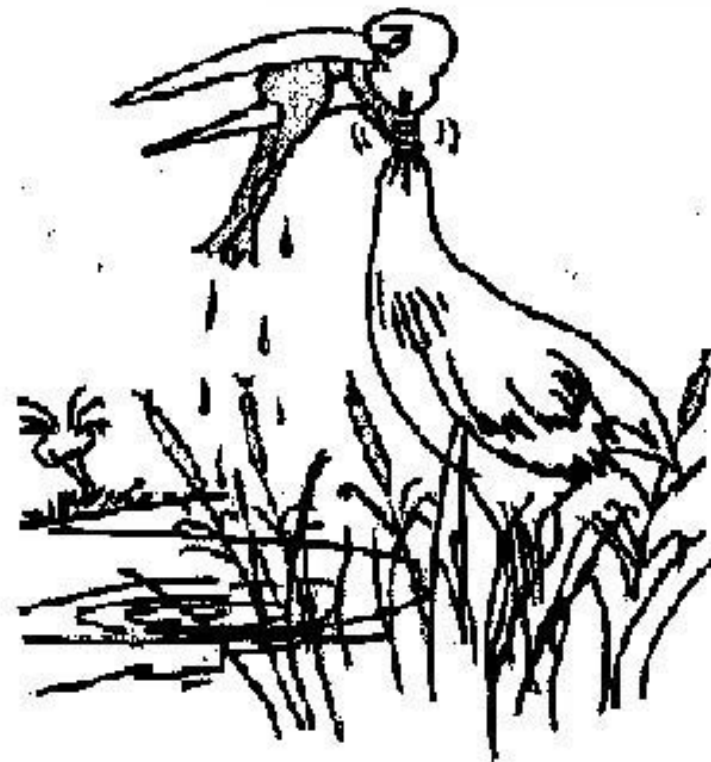


## Decision-making in acutely ill patients.

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- 152 consecutive acute medical patients were surveyed.
- Most patients want to receive a lot of information about their illness, but most prefer a relatively passive role in decision-making.
- Patient's preference cannot be predicted from clinical or socio-demographic data.

Wilkinson et al. Qual Saf Health Care. 2008;**17**:97-100



Don't EVER give up!