## TITLE OF CASE
Hepatic Adenoma, Cholelithiasis in Pregnancy

## AUTHORS OF CASE
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## SUMMARY
**Up to 150 words summarising the case presentation and outcome**
Patient was a 20 yr old female, who presented to emergency room for RUQ pain, back pain with nausea, vomiting and bloating. All symptoms are from couple of weeks. Abdominal US revealed a gallbladder with cholelithiasis and gallbladder sludge. She was just at the end of second trimester. Although we attempt to manage gallbladder conservatively, but certainly with her inability to gain weight and daily discomfort cholecystectomy warranted. Patient was taken for laproscopic cholecystectomy and found to have hepatic adenoma about 5cm and is definitely an incidental finding. Hepatic adenoma rare lesions that tend to occur in their reproductive years and associated with use of OCP, She had use Oral contraceptives less than 7 months. The gallbladder was removed very carefully, irrigated and JP drain was placed. Hepatic adenomas in pregnancy are highly vascular, any attempt to remove may cause significant hemorrhage. The patient symptoms improved after surgery, she was discharged home on POD#3 and instruction to follow up with surgeon and obstetrician in 2 weeks.

## BACKGROUND
Why you think this case is important – why you decided to write it up
Cholelithiasis is common diagnosis in females of child bearing age and sometime in pregnancy. The majority of patients are treated successfully. However in this case we have incidental finding of hepatic adenoma in pregnancy. Clinician and tech should look up in broad aspect when diagnosing cholelithiasis in pregnancy, because we miss US imaging in diagnosing adenoma. We should aware this could be also a complication of pregnancy. Proper and prompt initiation of imaging and treatment may help you to avoid any maternal fetal mortality.

## CASE PRESENTATION
Presenting features, medical/social/family history
J.T. is a 20 year old female who is otherwise healthy, currently at 25 week gestation. The patient has had severe gall bladder symptoms over the past several weeks. She has failed to gain weight during her pregnancy. She does have significant nausea, upper abdominal pain and bloating. She had been seen in the emergency room where a gall bladder ultrasound revealed a gallbladder with cholelithiasis and gallbladder sludge. Her labs are normal at that time. She has not had any yellow jaundice or darkening of the urine. Attempt to manage her conservatively through her pregnancy was made, but the patient has had persistent abdominal pain on a nearly daily basis. This is despite a bland diet.

PMH: Oterwise unremarkable.

Medications: Prenatal Vitamins.

Allergies: She has no known drug allergies.
Social Hx: Denise ETOH, tobacco, or illicit drug use.
   Single and lives with parents.

ROS:
   GEN: Decreased Appetite, recent 3lbs weight loss
   HEENT: Denise URI symptoms, dysphagia
   Cardiovascular: Mild substernal pain
   RESP: No cough, Sputum production or SOB
   GI: RUQ pain, nausea, vomiting, anorexia.
   GU: Denise frequency, burning or decrease flow with urination.
   Muskuloskeletal: Denise joint or muscle pain in extremities and neck.
   Neurologic: Denise HA, dizziness.

Physical Examination:
   • Vitals on Admission: T 98.3 F P: 93 R: 20 BP: 126/78 O2Sat 98%
   • GEN: Non toxic, NAD, A&Ox3
   • Heent: Neck supple, trachea midline, Sclera anicteric, oropharynx is clear.
   • Lungs CTA B/L
   • Heart: RRR, no MRG
   • Abdomen: Moderately obese and gravid, nondistended. The patient does have significant discomfort to palpation in the right upper quadrant.
   • Other: Remaining exam unremarkable.

INVESTIGATIONS If relevant

Lab Studies 02/26/09 In ER
CBC
   HB- 11.9 (L)
   HCT- 35.2
   SGOT (AST) - 81 (H) N (5-40)
   SGPT (ALT) 58 (H)
   Lipase 77 (N less then 300)

Lab Studies 3/13/09
CBC
   WBC 12.1 (H)
   HB 11.3 (L)
   HCT 32.1 (L)
   WBC Differential
   Auto Lymph 11 (L)
   Auto Gran 84 (H)

   Lipase 555 (H)
   Urinary Analysis (UA)-negative
   GallBladder US: Cholelithiasis and gallbladder sludge, no gallbladder wall thickening or ductal dilatation.

DIFFERENTIAL DIAGNOSIS If relevant

Biliary: Biliary colic, acute cholecystitis, cholelithiasis, cholangitis.
Hepatic: mass, hepatitis, abscess, hepatic CA
Gastric: Esophagitis, gastritis, PUD
Pancreatitis
Other: Viral gastroenteritis.
TREATMENT If relevant

A 20 yr old with symptomatic Cholelithiasis during pregnancy. She is just at the end of the second trimester. The indications, risks and benefits of laproscopic cholecystectomy were discussed. Although we attempt to manage gall bladder conservatively, certainly with her inability to gain weight and daily discomfort, cholecystectomy warranted in this patient. She than underwent a laproscopic cholecystectomy and was found to have a hepatic Adenoma of 5.0 cm close to gallbladder, the gall bladder removed carefully, A RUQ intraabdominal irrigation was completed. A Jackson-Pratt (JP) drain was placed in the RUQ and externalized.

OUTCOME AND FOLLOW-UP

The patient was returned to the general medical floor after surgery. The JP drain removed next day. Her recovery went very well, no recent complain of RUQ pain and abdominal bloating the bowel function returned on POD #2 and she was discharged home on POD #3. Before discharged discuss the option to manage adenoma and treat conservatively if no other complication, many times it regress after pregnancy. Patient was advise to follow up with surgeon and her gynecologist in 2 weeks.

DISCUSSION including very brief review of similar published cases (how many similar cases have been published?)

1. What are the incidence, mechanism and presentation of cholelithiasis in pregnancy?
2. What is the management of cholelithiasis in pregnancy?
3. What is hepatic adenoma, and its relationship with OCP?
4. Have incidence similar to this occurred in the past?
5. What is the best management of hepatic adenoma in pregnancy?

1. The incidence of cholelithiasis of pregnancy ranges from about 2 per 10,000 pregnancies in the United States to about 20 per 10,000 pregnancies in Europe. Pregnancy promotes bile lithogenicity and sludge formation because estrogen increases cholesterol synthesis and progesterone impairs gallbladder motility. In a large study in Chile, 12% of pregnant women had cholelithiasis, detected by abdominal US. A large American study showed a similar prevalence of gallstone during pregnancy.

Most gallstones are asymptomatic during pregnancy. Complications of cholelithiasis include biliary colic, cholecystitis, cholecystolithiasis, jaundice, and gallstone pancreatitis. The usual initial symptom is biliary colic that is located in the epigastrium or right upper quadrant and may radiate to the back or shoulders. The pain can occur spontaneously or may be induced by eating a fatty meal.

2. Patients who have recurrent biliary colic or acute cholecystitis usually undergo cholecystectomy. Preoperative management includes discontinuing oral intake, admission of I/V fluids, analgesia, and ABX. Ampicillin, cephalosporin, and clindamycin are safe antibiotic during pregnancy. Cholecystectomy is best performed during the second trimester. Cholecystectomy during the first trimester is associated with fetal death and during the third trimester is associated with fetal premature labour. Laparoscopic cholecystectomy is safe during pregnancy. Maternal and fetal mortality from acute cholecystitis are less than 5% during pregnancy.

3. Hepatic adenomas are rare benign hepatic tumors. Accelerated adenoma growth from gestational hyperestrogenemia. Most of hepatic adenoma are symptomatic at the time of diagnosis. A study was conducted by Klatskin in 87, reported that 41% of his 79 patients present with tumor rupture, shoch, hemiperitoneum and an additional 27% had acute abd pain. Another study was conducted by Sorensen and Baden found that 44% of 69 patients with hepatic adenoma had symptoms from tumor.
rupture or hemorrhage. The other presenting symptoms of patients who have hepatic adenomas are a palpable mass (22%-43%) or intermittent abd pain (1%-28%); occasionally the tumor are detected as incidental findings during evaluation for other problems (less then 5%).

It should be clear from the preceding discussion that hormonal factors are very important in the pathogenesis and clinical presentation of hepatic adenoma. There was a study done by Baum that low dose estrogen contraceptives introduced in 1970s has lowered the rates of LCA. The incidence of LCA in the 1960s and 1970s was 34 fold higher in users of oral contraceptivethan nonusers, with approximately 320 new cases a year in united states. Oral contraceptives contain either mestranol or ethinyl estradiol as synthetic estrogen. Early studies suggested that mestranol use more common then ethinyl estradiol use in patients who had hepatic adenoma. Unfortunately there are no new studies that carefully examine the epidemiologic link.

There is limited literature published on similar cases, of those identified, the cases were not current and i was unable to find any exact case where Hepatic adenoma specifically from 6 months use of oral contraceptive. An article published in 2004 by F.C Cobey and R.R. Salem reported a patient presented postpartum with an asymptomatic 4cm LCA and an elevated lipase. She had used oral contraceptive for less then 10 months prior to discovery of mass. After refusing surgery, she became a second time pregnant against medical advise and at 16 week the mass double in size, measuring 7.9 cm. She was followed up by monthly US and delivered by Cesarean section without complication. The mass at time of delivery was 10.7 cm. It was resected a year later after continued growth. There is additional 26 reports of hepatic adenoma in association with pregnancy. There were 3 presentation during first trimester, 10 in third trimester and 13 within first 2 months postpartum. Route of delivery mentioned for 16 pregnancies, there were 11 Cesarian sections and 5 vaginal delivers. LCA in pregnancy were frequently catastrophic; 16 out of 26 cases presented with rupture associated with pregnancy.

In non pregnant patients, observation of LCA less than 5 cm and resection for those greater than 5 cm has been recommended. This approach may be reasonable during pregnancy if close follow up is available as we could find very few reports of rupture with adenomas less than 6.5 cm. This would suggest to us that an aggressive approach to resection of LCA greater than 6 cm in pregnancy should be seriously considered. Finally the fact that one third of reported ruptured occurred post partum mandates very close post partum follow up in nonresected cases.

LEARNING POINTS/TAKE HOME MESSAGES 3 to 5 bullet points

1. Hepatic adenomas is a rare complication, and has the potential for mother fetus mortality. These patients need to be manage conservatively if tumor less then 5 cm, and many time it regresses after pregnancy.

2. Although US imaging may reveal hepatic adenoma as well as cholelithiasis and this can easily be prevented if we continue its high suspicion and appropriately investigate its sequel as presented in this case.

3. This case will educate us how to recognise the variability in symptoms of this disease.

4. Just because many disease have rare occurrence it does not mean they do not still exist.

REFERENCES

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