Ashford and St. Peter's Hospitals
NHS Foundation Trust

STANDARD OPERATING PROCEDURE

Management of ovarian cysts in pregnancy

Procedure for referral, management and follow up

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PURPOSE

The purpose of this SOP to ensure that all staff looking after patients with an ovarian cyst in pregnancy have knowledge of the pathway involved for assessment, referral and management of the patient in the antenatal, labour and postnatal period.

OBJECTIVE

To maintain safe practice for both patients and provide a protocol to refer to for patients with an ovarian cyst in pregnancy.

SCOPE

This guidance is relevant to following staff groups:
All clinical staff working within Maternity, Main Theatres, Main Recovery and the Postnatal Ward.

COMPETENCIES

N/A

BACKGROUND

The prevalence of adnexal masses in pregnant women is 0.19-8.8%[1]. The most common masses are mature teratomas (dermoids) and para-ovarian or corpus luteum cysts. Corpus luteal cysts rarely persist beyond 16 weeks gestation. The incidence of ovarian malignancy is 1 in 1500-32000 pregnancies[2]. This could be of germ cell or stromal origin, or a borderline tumour. Large cysts may cause pain in pregnancy and may cause ovarian torsion, requiring emergency management. Accurate assessment and characterisation of the cyst, patient counselling and discussion will guide antenatal management and decisions about delivery.

PROCESS

Cyst assessment

Depending on the gestational age abdominal ultrasonography may be used in addition to transvaginal ultrasound as the ovaries may be outside of the pelvis at later gestations.
It is appropriate to refer a woman to the antenatal clinic for the lead consultant for ovarian cysts in pregnancy as soon as possible if the ovarian cyst fulfils any of the following criteria:
· A unilocular cyst with a maximum diameter >50mm, or
· A bilocular cyst whose sum of the maximum diameters is >50mm, or
· Women with a complex ovarian cyst of any size which is not obviously determined as benign (e/g dermoid, endometrioma), or
· If interval scans at least 4-6 weeks apart show cyst growth more than 20%[3].
Women should be seen in the next available routine antenatal clinic appointment for the first two criteria and within 2 weeks for complex cysts of uncertain aetiology. It may be appropriate for them to be seen in the gynae-oncology 'two-week rule clinic' depending on the scan findings and clinic availability.
The same ultrasound criteria can be used to characterise ovarian masses in pregnancy as in non-pregnant women[2].IOTA cyst[4] assessment criteria should also be used where possible.
If the cyst does not meet the above criteria it is likely to be benign. It should be reassessed at the anomaly scan if diagnosed in early pregnancy. If the ovaries are clearly seen, and normal, then no further management is required and the patient can continue on the routine antenatal pathway. If a cyst persists not meeting the above criteria then the woman should be reassured that this should not affect the pregnancy management or delivery.

Further assessment

· Magnetic resonance imaging is the modality of choice if additional imaging is required because it poses no fetal radiation exposure. The use of gadolinium contrast medium, which is used to enhance vascularity in malignant tissue, remains uncertain. MRI should be requested by the lead consultant if necessary.
· Ca125 rises in pregnancy, peaking in the first trimester. There is no consensus of the upper limit of normal in pregnancy, although some evidence suggests an upper value 112U/ml[5]. Ca125 should not be routinely requested in the assessment of ovarian cysts in pregnancy, but a baseline measurement can be used in the presence of a suspicious or indeterminate adnexal mass.

· Serum BHCG, AFP, and inhibin are also raised during pregnancy limiting their use. LDH serum titres are raised in cases of dysgerminoma and unaffected by pregnancy, so it remains a useful marker when this is suspected.

Management

Management is dependent on the size and nature of the cyst as well as any patient symptoms.

Suspicious/malignant cysts

Prompt gynae-oncology MDT discussion will occur if cyst assessment suggests a suspicious or malignant cyst. Further management will be guided by the oncology team. If a diagnosis of malignancy is made in pregnancy then the patient should also be referred to the maternal medicine antenatal clinic for further management and discussions regarding timing of delivery.

Benign asymptomatic cysts

Generally surgery is best avoided during pregnancy.
The risk of acute cyst event such as haemorrhage or torsion must be communicated to the patient and considered as a pathology if the patient presents with acute symptoms. If ovarian torsion is suspected and the patient requires surgery, the pregnancy should not prevent or delay this.

In rarer circumstances where large cysts are causing chronic symptoms such as pain, or are expected to cause problems later in pregnancy due to their size, it may be appropriate to consider elective cystectomy/oophorectomy in the early second trimester via laparoscopy/laparotomy. This should be a MDT discussion and individualised to the patient. Transvaginal or transabdominal cyst aspiration can also be considered with antibiotic cover, on an individual basis for cysts causing significant symptoms.

Surgical considerations:
Laparoscopy or laparotomy should be performed depending on the gestation and clinical picture. In comparison with open surgery, laparoscopy for adnexal and gallbladder disease has no increased risk for mother and fetus. Where appropriate surgical equipment and expertise is available, laparoscopy should be considered an appropriate surgical approach[6]. When deciding on the route of surgery clinicians should be aware that recent small series have shown good maternal and fetal outcomes for laparoscopic appendicectomy, cholecystectomy and adnexal surgery up to 34 weeks gestation, which extends historical recommendation to limit laparoscopic surgery to the second trimester[6].
Due to enlargement of the uterus and subsequent limitations to visual field and surgical access there is an increased risk of vascular and organ trauma, in particular uterine perforation, although this risk has not been quantified. Clinicians should counsel women about consequences of uterine perforation, which include subsequent uterine rupture, infections, preterm delivery, and laceration of the fetus or the placenta. The size of the perforation is likely to be of importance. Clinicians should be aware that there is increased risk of bleeding due to increased vascularity of uterus and adnexae, but this risk is currently not quantified[6].
Surgical management beyond the threshold of viability should be performed at St Peter's Hospital rather than at Ashford Hospital, in case immediate delivery is required. Prior to this threshold, theatre site choice should be considered and decided upon an individual patient basis.
Anti-D administration is not required for Rhesus negative women undergoing laparoscopy as it is not a sensitising event[7].
A multi-disciplinary team should be in charge of the care of pregnant women requiring surgical intervention. Depending on the individual case, and the individual skills and experience, this team may include gynaecologists, general surgeons, obstetric anaesthetists, obstetricians and neonatologists.

Delivery considerations:
The presence of an ovarian cyst should not require Caesarean section delivery. However antenatal discussion regarding the possibility of ovarian cystectomy/oophorectomy during a potential emergency Caesarean delivery should occur. Cystectomy/oophorectomy should only occur if the correct team are present in theatre, if both the mother and baby are well, if the anaesthetist is in agreement, and if labour ward acuity allows. In some circumstances it may be appropriate for the consultant on call to attend from home to facilitate surgery to the cyst if the on-call Registrar is not competent to perform independently.

Postnatal management:
A transvaginal ultrasound scan should be performed 6-8 weeks post-delivery. This plan will be part of the postnatal discharge plan and the ultrasound can be arranged by the GP to ensure follow up if required and referral to the benign gynaecology clinic if appropriate.

RESPONSIBILITES

This is a guideline within a standard operating format and so individual practitioner's variance of medical practice may occur. A practitioners experience is encouraged to improve /contribute to the guideline/SOP detailing clinical their clinical reason for the deviation as appropriate to the patient's requirements.

AUDIT

This SOP will be formally reviewed on a maximum of an annual basis to ensure the relevance of the document. Any changes in the process within this period will be added to the SOP and reported to the Clinical Governance team.

RISKS

The SOP becomes out of date with new information and practices.

REFERENCES

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4. Timmerman D, et al. Simple ultrasound-based rules for the diagnosis of ovarian cancer. *Ultrasound Obstet Gynecol* 2008; 31: 681-90.
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APPENDICES

Appendix 1. Flowchart for Management of Ovarian Cysts in Pregnancy