TOP TIPS/ INTERESTING CASES

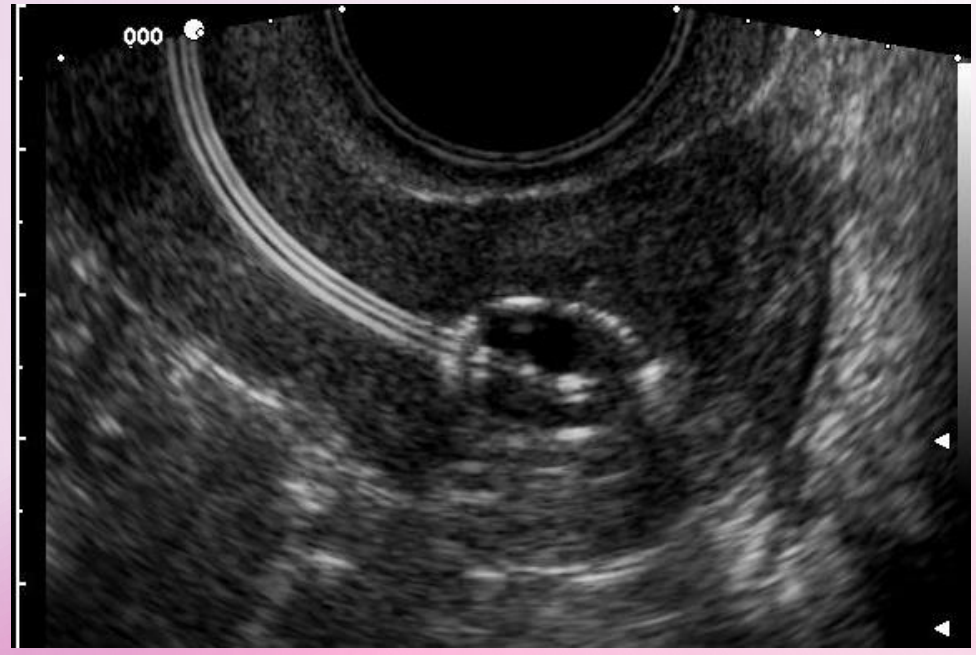
PRE-PROCEDURE…

- PAIN RELIEF 30-60 MINS PRIOR TO PROCEDURE
- ANTIBIOTIC COVER ORGANISED AND COLLECTED BY PATIENT
- INFORMATION LEAFLET GIVEN AT TIME OF BOOKING
- WARM SALINE FOR CLEANING AND INSTILLING IF POSSIBLE

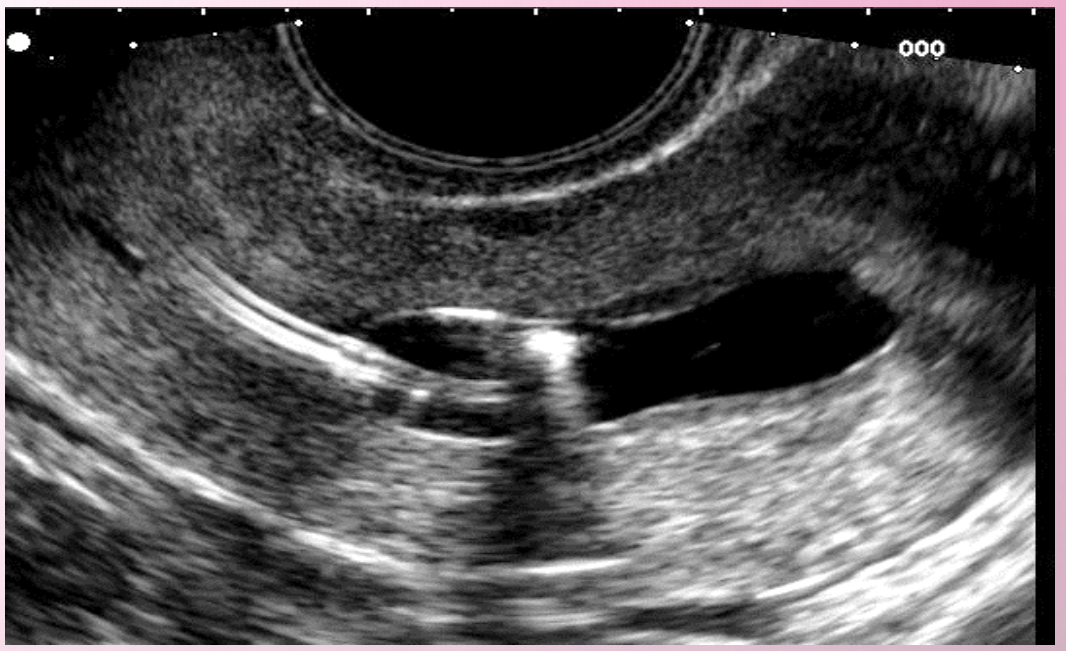
IN-PROCEDURE…

- ASSESS BOTH ADNEXAE BEFORE CONTRAST
  TO CONFIRM OVARIAN POSITION
- AVOID OVERINFLATING BALLOON
- SLOW STEADY INJECTION – BOLUS CAN INDUCE VASOVAGAL REACTION OR SPASM
- IF PERSISTENT SPASM, CHANGE TO SALINE AS LESS VISCOUS
- DOPPLER BOLUS IF UNSURE OF SPILL
- GOOD COMMUNICATION WITH YOUR PATIENT THROUGHOUT
- IF DIFFICULT CANNULATION: RV UTERUS (SIT ON FISTS)
  CHANGE TO INTEGRATED CATHETER
  TENACULUM USE (LAST RESORT)

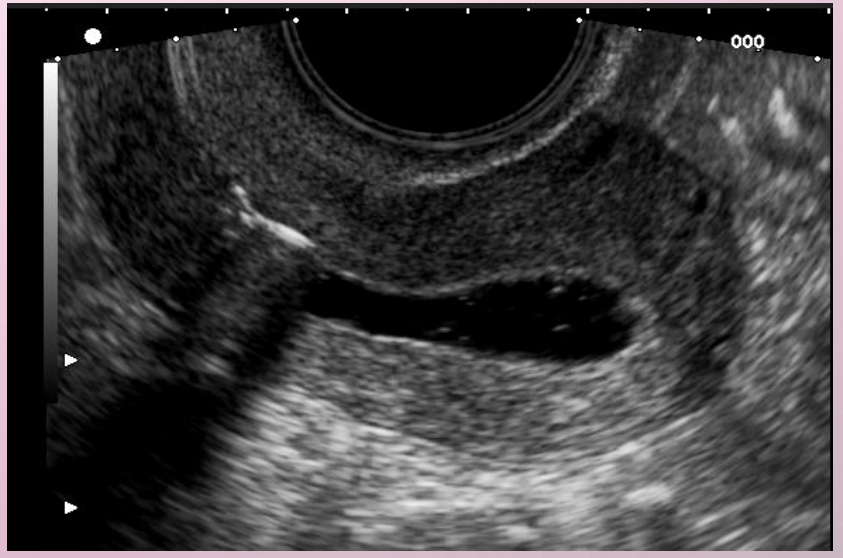
BALLOON CATHETER PLACEMENT



Retract balloon



Remove balloon if necessary



Aim for just beyond internal os

SPASM vs TUBAL BLOCKAGE

- ❑ Often linked to cramping, discomfort and anxiety
- ❑ Tube temporarily narrows or closes near the uterus
- ❑ Relatively common
- ❑ Often resolves during test or appears normal on repeat testing

- ❑ May be painful, but not always
- ❑ Persistent interruption of contrast flow. Contrast may partially fill or 'shunt' through tubes and not spill freely
- ❑ Less common (subsequent laparoscopy often shows normalcy)
- ❑ Persistently closed

A single HyCoSy test cannot always distinguish spasm from blockage – if unsure, could repeat. Reassure patients that if there is unilateral blockage, this may not change onward management

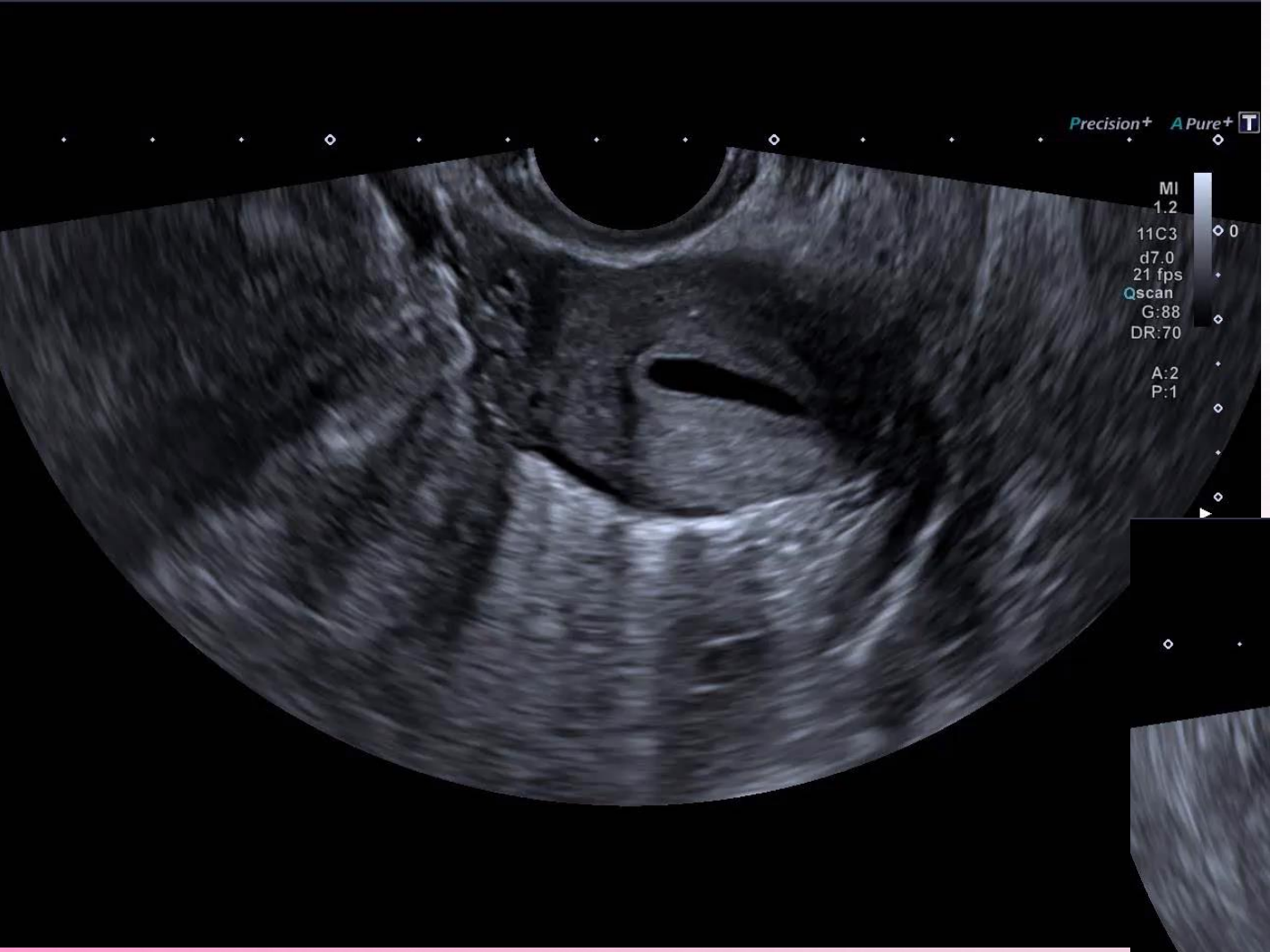
INCORRECTLY SITED BALLOON

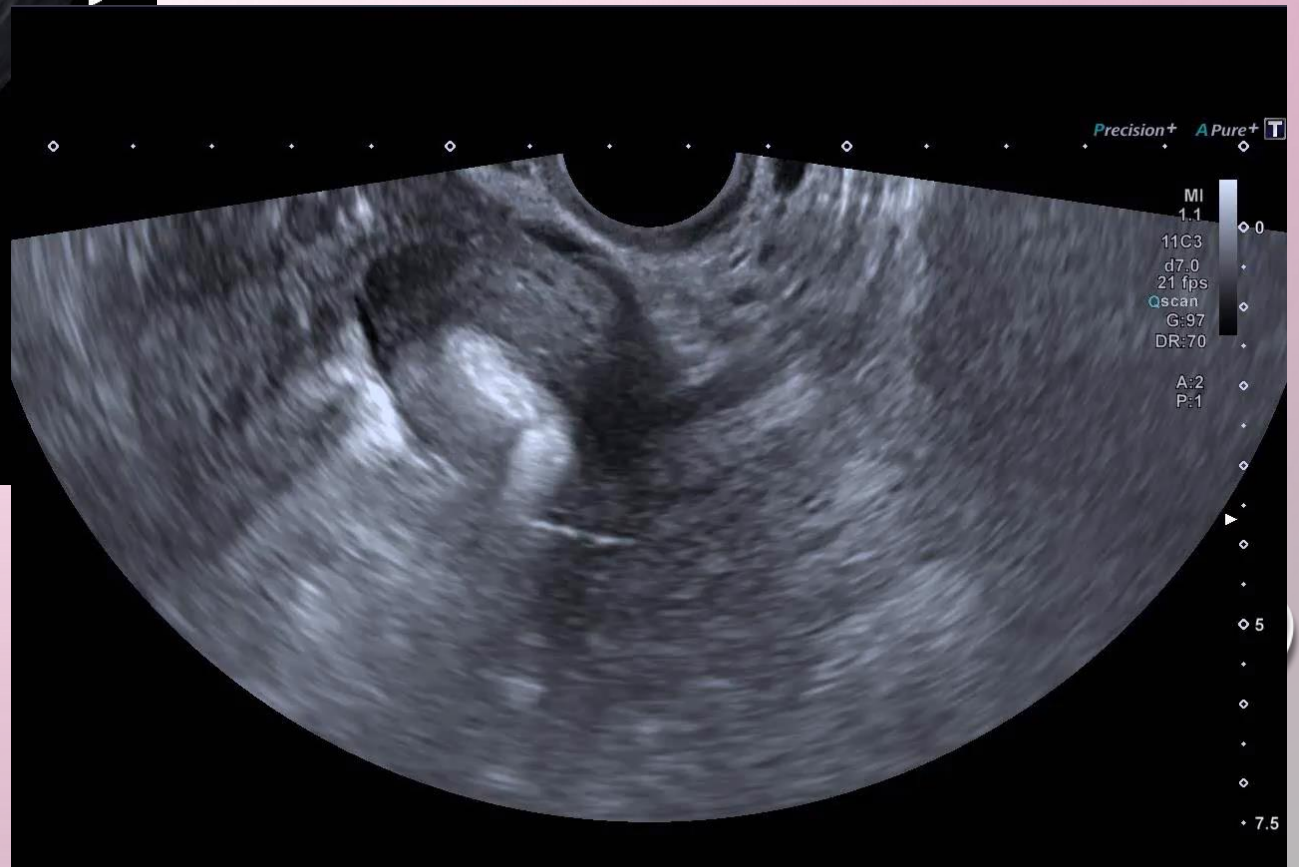
Saline Infusion Scan findings – Endometrial polyp

"Within the endometrium there is a 28mm x 16mm hyperechoic rounded lesion which is outlined by saline when saline infusion sonography is performed. Appearances are in-keeping with a large endometrial polyp".

Ovarian position

"The left ovary is high, posterior to the uterus, making accurate assessment difficult. The left tube demonstrated proximal fill but views were obscured when the tube exited the cornual region and could not be assessed"





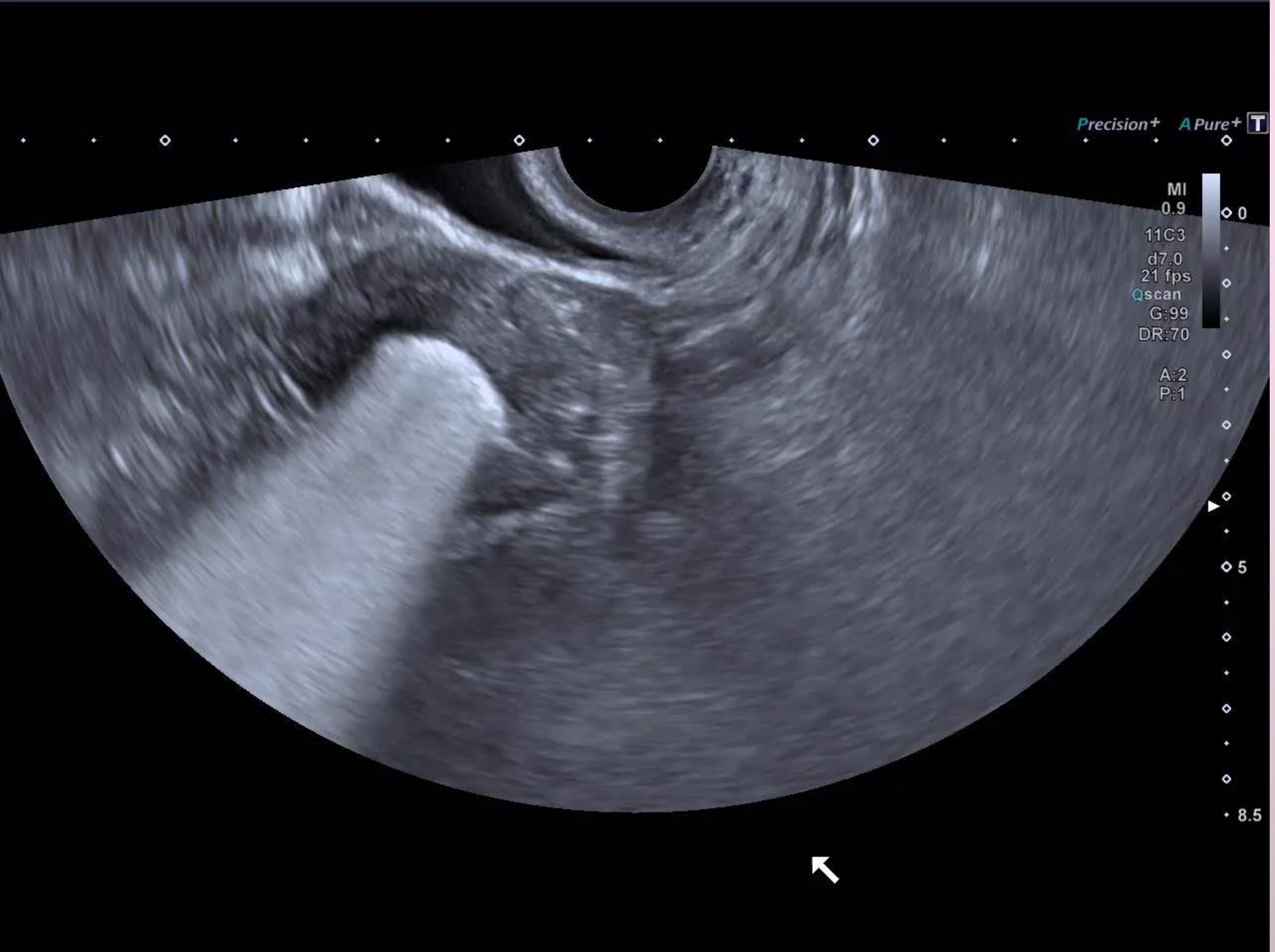
Lt tube not visible (posterior to uterus)

Subseptate uterus – often need to focus on one cornual exit at a time

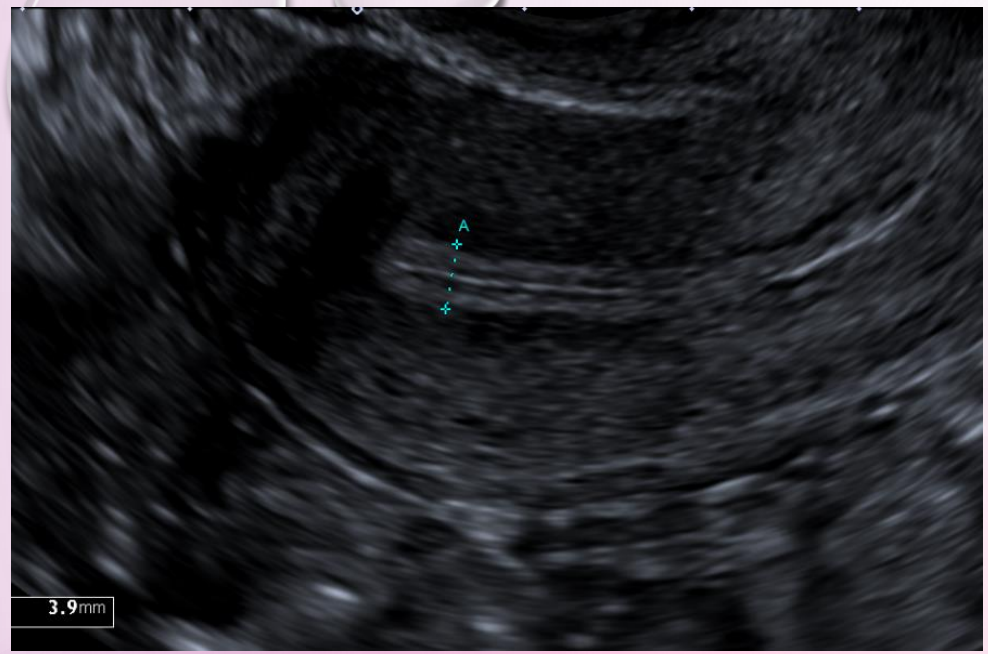
"2D assessment of the anteverted uterus demonstrates separation of the cavity at the fundal aspect. 3DTVS demonstrated a subseptate uterus with a septal length of 12mm.

Fibroid displacement – unable to visualise Rt tube

"On instillation of 1-2mls of saline, the known fibroid significantly distorts the cavity, displacing it posteriorly. The fibroid is sited within the right myometrium, which appears to indent at the level of the cornua, so visualisation of contrast within the right tube has been difficult"

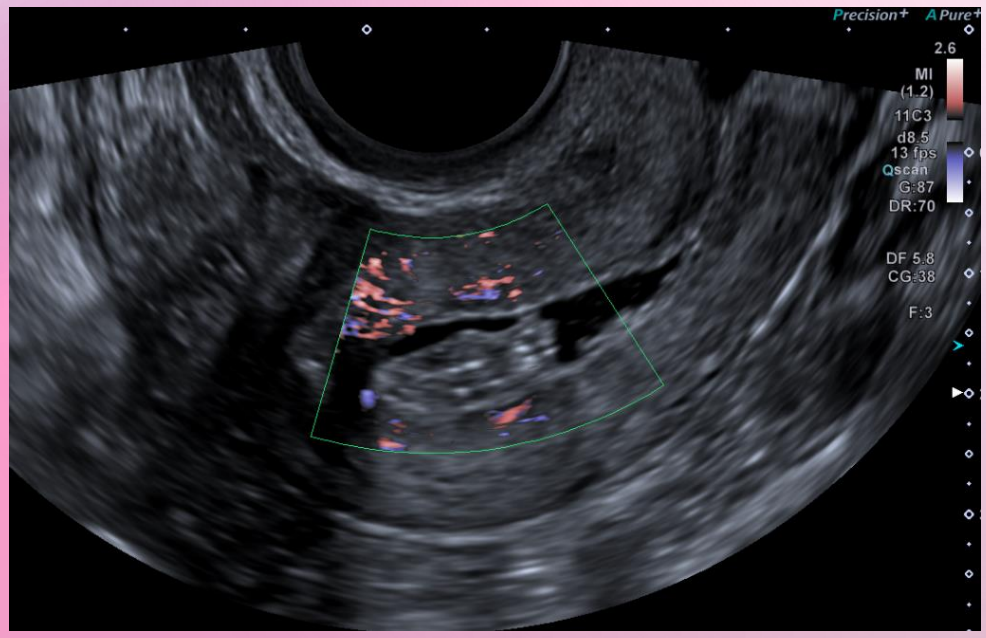


The effect of increased body habitus: document scan limitations



"Upon installation of saline, an area of focal mobile echoes are seen within the cavity. Appearances are thought likely to represent menstrual product/clot"

Debris/clot within cavity only visible on SIS



Absent right-sided cornual exit

"On instillation of ultrasound contrast there was normal fill and spill identified from the left fallopian tube however despite waiting for any tubal spasm to subside there was no contrast identified exiting the right tube at the level of the cornua"

Limited Examination

Spill only (2nd attempt – scanned through speculum)

"Cannulation of the cervix was very difficult. Upon the third attempt, cannulation was possible but poorly tolerated. Limited examination due to patient discomfort and scanning through speculum. The proximal fill of tubes was not visualised but definite bilateral spill is seen, indicative of bilateral tubal patency".

"On instillation of ultrasound contrast there was initial bilateral delay but following a significant volume of contrast use (20mls), normal fill and spill was then identified from both the right and left fallopian tubes. The right cornual exit was poorly visualised but clear spill is noted bilaterally, indicative of tubal patency".

10 mins + 20mls contrast later…

Important documents

Patient information leaflet

Having hystero contrast sonography (HyCoSy)

The aim of this information sheet is to answer some of the questions you may have about having hystero-contrast sonography (or HyCoSy for short). It explains the benefits, risks and alternatives of the procedure as well as what you can expect when you come to hospital. If you have any further questions and concerns, please speak to a doctor, nurse or healthcare specialist caring for you.

What is HyCoSy?

HyCoSy is an examination of your fallopian tubes. It is here in the fallopian tubes that the female egg meets with the male sperm to fertilize the egg.

It is important that your fallopian tubes are open so this can happen - if there is a blockage, it might stop you becoming pregnant. Fallopian tubes can become blocked i.e. following a pelvic infection, or after surgery.

What are the benefits of having a HyCoSy?

HyCoSy can show if your fallopian tubes are open or closed. The test also allows us to examine the cavity of your uterus (womb) to check that there are no problems that might affect getting pregnant.

Are there any risks associated with a HyCoSy?

There is a small risk of a pelvic infection from this test. To minimize this, you will be provided with a prescription for 5 days of an oral antibiotic when you are seen in the fertility clinic. It is essential that you bring this with you to your appointment, as it can only be dispensed at the hospital pharmacy. If you do not bring your prescription the day of your test, it will have to be rescheduled. In the 5 days following the test, you should contact your GP or call 111 if you begin feeling unwell, and tell them you have had this test.

You may feel some pelvic discomfort during HyCoSy (it's like a mild period cramp). We suggest you take two Ibuprofen 200mg tablets, or two 500mg tablets of Paracetamol one hour before the procedure, in order to reduce the amount of discomfort you may experience.

Occasionally this test may cause you to bleed slightly once it has finished. The bleeding will not be heavy and should settle down in a day or two. Please use pads during this time and do not insert a tampon.

In about 5% of HyCoSy tests, the pictures produced are unclear. If this is the case, you may need further tests.

Are there any alternatives?

There is another test called a Hysterosalpingogram (HSG), which looks at the fallopian tubes using X-rays instead of ultrasound. This test is used for patients who have had previous pregnancies, pelvic infections or pelvic surgery.

The fallopian tubes can also be assessed by a simple operation called a laparoscopy, which involves a general anaesthetic. This test is reserved for patients with severe pelvic pain, or as a further test when the ultrasound or X-ray test is unclear.

What do I need to do to prepare for a HyCoSy?

On the first day of your period, telephone **01752 439 287** between 9.00am and 3.00pm to book your test. Please ring on Monday if this falls on a weekend. The test will usually be done within ten days of your period starting but if there is a shortage of appointments, you may be asked to ring back when your next period starts.

You may eat and drink normally before and after your appointment.

As already mentioned you may have slight vaginal bleeding after the test, and you are advised to bring a panty-liner or sanitary towel.

From the first day of your period on the month of your appointment, please use protection (a condom) if you have sex. You need to do this from the time you book the test, until after your subsequent period.

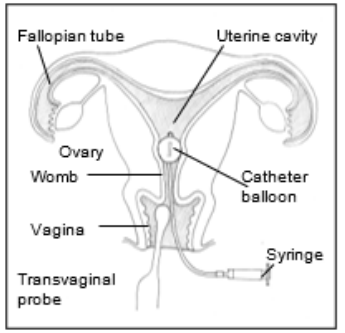
Asking for your consent

We want to involve you in all the decisions about your care and treatment. If you decide to go ahead, you will be asked to sign a consent form on the day. This confirms that you agree to have the procedure and understand what it involves.

What happens during the HyCoSy test?

The person who carries out the test will be an ultrasonographer or a doctor or nurse. He or she will:

1. Ask you to lie down (the first part of the test is very similar to a smear test). Your legs will be supported in stirrups and we will ensure you are comfortable at all times.
2. Gently insert a speculum into your vagina (a speculum is a plastic device to allow us to see the neck of your womb).
3. Slowly insert a narrow plastic tube (catheter) through the neck of your womb (cervix).
4. Slowly inflate a tiny balloon on the catheter in order to keep it in position.
5. Pass a small amount of water through the catheter to show up the lining and cavity of your uterus. We will then carry out an internal ultrasound scan of the uterus.
6. Pass a special ultrasound fluid called EXEM foam through the catheter to show the outline of your fallopian tubes. We will then carry out an internal ultrasound scan of the fallopian tubes. EXEM foam is made up of a harmless solution, which will be absorbed by your body after the scan.



The test takes 15 to 20 minutes. It takes place in the ultrasound department, which is in X Ray West at Derriford Hospital. If you have any questions or concerns before the examination, please phone us on 01752 439 287

What happens after the test?

At the end of the test we can usually let you know the findings. If any further tests need to be done, these will be organized after the day of the test.

If your fallopian tubes are blocked, or there are problems with your uterus, your doctor will explain the options for treatment.

What do I need to do after I go home?

You can go home immediately after the test. You can carry out normal daily activities, and continue having protected intercourse until after your next period. Please complete your course of antibiotics. If you feel unwell, or notice a discharge, please call your GP or 111 for advice immediately, and tell them about this test.

HyCoSy Departmental Protocol

Plymouth Hospitals NHS
NHS Trust

Procedure: Protocol	Title: HyCoSy

Purpose

Hysterocontrastsonography (HyCoSy) investigates Fallopian tube patency. Saline hysterosonography is performed at the same time as the HyCoSy assessment to examine the uterine cavity and may demonstrate pathologies such as polyps, submucous fibroids and intrauterine adhesions. It can also highlight uterine abnormalities such as septae.

Preparing for the Examination

Setting up the trolley

The trolley should contain:

Basic pack
1 HSG catheter
1 plastic disposable speculum
1 metal reusable sponge holding forceps
2 x 20ml syringes
1 pair of sterile glove (size according to operator)
Catheter
The EXEM foam can be prepared in advance. (if there is a delay before start of tubal assessment the foam can be re-agitated)

At least 40ml of sterile saline is poured into the second gallipot.

If tubal testing is needed, keep EXEM foam (contrast) close by, but do not prepare yet.
A sterile metal tenaculum should also be available, but the pack need not be opened at this stage.

The ultrasound machine

The ultrasound machine is switched on, with the transvaginal probe active.

The patient

- The patient referral is reviewed.
- The patient's ID is entered onto the ultrasound machine.
- The patient is called from the waiting room and asked to empty her bladder. Patients may be accompanied into the room by a partner or friend if they wish.
- All women undergoing HyCoSy should have been given a HyCoSy patient information sheet prior to booking the procedure
- The patient's ID should be confirmed.
- A HyCoSy consent form is completed including:
- Check LMP – HyCoSys are usually performed in proliferative stage.
- Confirm that the patient has not had unprotected sex since her LMP. If there is a risk of pregnancy, abandon the procedure.
- All women are asked to take antibiotic prophylaxis around the time of the procedure. They will have been prescribed doxycycline 100mg bd for 5 days, starting on the day

of the test. Confirm that the woman has collected or plans to collect the antibiotics on the day of the examination.

- Some women find the examination uncomfortable. To minimise this, patient s are asked to take analgesia of their choice an hour before the test. Confirm that this analgesia has been taken.
- Check whether the patient has any allergies.
- The patient is given privacy to undress from the waist down and is then helped to settle herself into the lithotomy position. She is given a sheet to place in her lap.
- The lights are dimmed.
-

The examination

- The operator washes their hands and puts on sterile gloves.
- The examination starts with a baseline scan including an antral follicle count of both ovaries.
- Some aspects of the baseline scan may be omitted if the woman has recently had such a scan.
- 20ml of saline is drawn up into the one of the syringes.
- The HyCoSy (HSG) catheter is prepared by checking that the retaining balloon inflates appropriately. The catheter is primed by attaching the 20 mls syringe and flushing through a small volume of normal saline. The tap is closed and the syringe temporarily removed.
- A sterile sheet is placed under the woman's bottom. Sterile paper cover from the gloves is placed on the lower abdomen. The spotlight is used to illuminate the perineum.
- The perineum is cleaned with a sterile swab soaked in saline. A speculum is gentle advanced into the vagina and the cervix exposed.
- The cervix is cleaned using a swab soaked in saline.
- The end of the HyCoSy/HSG catheter is grasped with the sponge holding forceps and advanced into the cervical canal.
- If the catheter will not advance the tip may be curved using a sterile swab. A tenaculum placed on the anterior lip of the cervix may also be helpful.
- Between 0.5-1ml of air is used to inflate the balloon. This should be positioned just above the internal os or within the cervical canal if the catheter cannot be passed through the internal os. Ask the patient when they sense the very start of uterine cramps and stop inflating. The tap is turned to stop the balloon deflating.
- The speculum is removed. The scan probe is replaced. The saline filled syringe is reattached to the catheter and the tap opened. It is placed on the sterile towel on the patient's lap.
- Once a clear longitudinal view is obtained the assistant slowly depresses the plunger to instill saline into the endometrial cavity. Saline appears echo lucent on the ultrasound image.
- The operator should perform 'sweeps' from the side to side and top to bottom to examine all parts of the cavity in both longitudinal and transverse sections. Images may be taken and printed. Any abnormalities may be highlighted and appropriate measurements made.
- The saline filled syringe is now replaced with the syringe containing the prepared EXEM foam.
- The operator now obtains a transverse section view of the uterus and tried to anticipate the level of the cornual exit.

- EXEM foam is slowly instilled. This will appear echogenic on the ultrasound image. The operator should try to identify cornual exit on each side as well as peritoneal spill.
- If EXEM foam cannot be clearly seen spilling out around each ovary, then the colour Doppler may be used. The assistant is asked to give a brisk bolus dose of either EXEM foam or saline. IF flow is identified, the test should be repeated to confirm true patency.
- The probe is removed and the examination is finished. Refer to 'disinfecting probes protocol.

The test should be abandoned if the woman experiences severe pain. This should raise suspicion of tubal pathology (although cornual spasm may also be the cause).

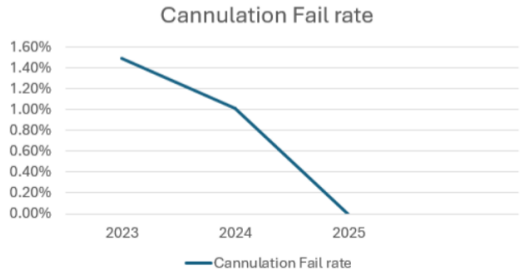
- As patient for a pain score for the examination and record on consent form.
- Allow the patient to rest for a moment. Encourage her to sit up slowly in case she feels faint. Offer tissues and sanitary towels.
- Once the patient is dressed, the findings should be explained.
- Make sure that the patient understands her management.

AUDIT

Date	Patient No.	Tick list Y/N	Cannulation Y/N easy/diff	Pain score 0-10	Diagnosis	Imaging	Comment
16/9/24		y	CP AMC	4	Prompt fill and spill	y	CP cannulate
16/9/24		y	CP AMC	8	Prompt fill and spill	y	CP cannulate
23.09.24		Y	JV	6/10	Prompt F&S	Y	
30/9/24		y	CP AMC	8/10	Prompt fill and spill	y	Vasovagal with CP AC recanulated
7/10/24		y	CP	4/10	Prompt fill and spill	y	CP all
14/10/24		y	CP	8/10	Prompt fill and spill	y	CP all
14/10/24		y	CP	5/10	Prompt fill and spill	y	CP all
14/10/24		y	CP	3/10	Prompt fill and spill	y	CP all
14/10/24		y	CP	5/10	Prompt fill and spill	y	CP all
31/10/24		y	CP	9/10	Prompt fill and spill	y	CP all pt v y anxious
4/11/24		y	CP		Abandoned as ovulated for rebooking		CP all

- **2023:** cohort of 67 patients scanned: 1 failed cannulation
  1.49% fail rate, **98.51%** pass rate
- **2024:** cohort of 99 patients scanned. 1 failed cannulation
  1.01% fail rate, **98.99%** pass rate
- **2025:** cohort of 90 patients scanned. 0 failed cannulation
  0% fail rate, **100%** pass rate

Year	Cannulation Fail rate
2023	1.49%
2024	1.01%
2025	0%



AUDIT REQUIREMENTS

- Currently no audit requirements for HyCoSy, but HSG local standard set at >95% (5% Fail rate)

Published: 6 May 2010 | Last Reviewed: 16 Jul 2022

Assessing the technical quality of the Hysterosalpingography service

- Assessing the technical quality of the Hysterosalpingography seAssessing the technical quality of the Hysterosalpingography | The Royal College of Radiologists

Happy scanning!