

FILENAME SW-GSCOP
OPERATION NO 039
SURGEON.....M.H.EDWARDS
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GASTROSCOPY PANTOGEN

THESE STEPS COVER

ENDOSCOPIC EXAMINATION FROM THE MOUTH TO THE SECOND PART
OF THE DUODENUM

MUCOSAL BIOPSY

OLYMPUS GASTROSCOPE GIF XP10 OR XQ20_

LIGHT SOURCE OLYMPUS CLE-4E

SUCKER ESCHMANN DS 402

INJECTION OF OESOPHAGEAL VARICES
See Pantogren Development file

THESE STEPS DO NOT COVER

INJECTION OF PEPTIC ULCER

OESOPHAGEAL DILATATION

SECTIONS

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SURGEON
STEP
NUMBER

- 1 PRELIMINARIES - READ ON
- 2 CHECK YOU HAVE THE CORRECT PATIENT
- 3 CHECK THERE IS A PROVISIONAL DIAGNOSIS
- 4 CHECK THERE ARE 2 MORE ALTERNATIVE DIAGNOSES
- 5 CHECK YOU ARE CERTAIN WHAT INFORMATION THE GASTROSCOPY SHOULD REVEAL
- 6 CHECK THERE IS NO OTHER PROCEDURE TO DO
- 7 CHECK YOU HAVE THE CORRECT GASTROSCOPE

Preferably the GIF XP10.

Or the GIF XQ20 in Darlington.

- 8 ANAESTHESIA - READ ON
LOCAL ANAESTHESIA is described first.

FOR GENERAL ANAESTHESIA

Check the anaesthetic equipment and the anaesthetist are on the patient's left.

Check the endotracheal tube is fastened on the left side of the patient's mouth.

Check you have a laryngoscope that lights up.

Check the gastroscopy equipment and scrub nurse are on the right hand side of the patient.

Check the student is behind and to your left.

- 9 POSITION - READ ON

Start with the patient supine with the right

antecubital fossa accessible.

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NUMBER

10 CHECKING THE EQUIPMENT AND MATERIALS - READ ON

11 CHECK THE GASTROSCOPE

The list below is a series of checks running in a clockwise circuit around the equipment and materials.

You must check ALL the steps in the list before you can rely on the instrument.

12 CHECK THE WATER BOTTLE

Check the bottle is present.

Check the bottle contains water up to half full.

Check the cap is screwed on tightly.

13 CHECK THE MAIN POWER
SWITCH ON THE CONTROL PANEL
IS SWITCHED ON

When switched on, you will hear the hiss of the air pump.

If there is no air pump noise:-

Check the gastroscope is plugged into the wall socket.

Check the power is switched on at the wall.

Check for a fuse.

14 CHECK THE EXPOSURE INDEX

The exposure index should be at number 5.

15 CHECK THE LAMP BRIGHTNESS

Turn the dial to BRIGHT.

16 CHECK THE AIR FEED SWITCH IS ON

17 CHECK THE TIMER SWITCH IS OFF

18 CHECK THE WATER SUPPLY TUBING

Check the end of the tubing has firmly clicked into socket on the right hand side of the gastroscope shaft.

19 CHECK THE GASTROSCOPE SHAFT

Check the shaft has firmly clicked into its socket in the control panel.

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NUMBER

19 CONT Check the shaft ring collar is tightly screwed up.

20 CHECK THE SUCKER TUBING

Check the sucker tubing is a snug fit of the socket on the left side of the gastroscope shaft.

Check the sucker tubing is firmly pushed onto the socket.

21 CHECK THE 2 GASTROSCOPE
ROTATION LOCKS ARE FREE

Push both locks on the gastroscope handle forward to F.

22 CHECK THE LENS IS CLEAR

Look through the eyepiece.

Check the lens focus.

Turn the knurled collar on the gastroscope handle to get the best focus.

If the view is not clear, switch off the light source, and look at the light emission lens on the distal end of the gastroscope.

Usually the lens is not clean if the view is blurred.

Rub the lens with a moist swab to clean the deposit away.

If the lens is clean, and the view is not clear, there may be water in the gastroscope.

Get a replacement gastroscope.

23 CHECK THE AIR SUPPLY

Place the distal end of the gastroscope under water.

Press the air supply button on the gastroscope handle.

There should be vigorous bubbling (widdling noises).

If there is not, switch off the light.

Clear the air nozzle at the opposite end of

STEP
NUMBER

23 CONT

the gastroscope by poking with the bristles of a fine toothbrush.

If this does not work, get a replacement gastroscope.

24 CHECK THE LENS WASHER

Press harder on the air supply button on the gastroscope handle to switch to water supply.

Water should spray vigorously from the distal end of the gastroscope.

If the water only drips, or does not flow at all, switch off the light.

Clear the orifice in the distal end of the gastroscope with the bristles of a fine toothbrush.

If this does not work, get a replacement gastroscope.

25 CHECK THE SUCTION

(For an Eschmann DS402 suction machine).

Dip the distal end of the gastroscope into the gallipot water.

Press the suction button on the gastroscope handle.

If the water is not vigorously sucked into the gastroscope:

Check the suction machine is plugged in at the wall.

Check the power is switched on at the wall.

Check the switch with a Z sign on the left hand side of the control panel is switched to 1.

Check the switch with the bottle sign on the left side of the control panel is switched to 1.

Check the suction collection
bottles are correctly:
Fitted with tubing.

STEP
NUMBER

25 CONT

Sealed with the stoppers.

Replace the filters.

Call an ODA.

26 CHECK THE BIOPSY FORCEPS

Check they will pass down the biopsy channel
of the gastroscope.

Check the forceps are spiked.

Check the jaws open widely and
freely and close tightly.

27 CHECK THE SPECIMEN CONTAINERS

Check the containers contain
formaldehyde.

Remove the cap from 1 container.

Place the container within reach on the
gastroscope trolley with the label away from
you.

28 CHECK THERE IS A LECTURESCOPE LS-2

Check there is a connecting collar if you
have an older gastroscope.

29 FOR GENERAL ANAESTHESIA - GO TO STEP 66

(FOR GENERAL ANAESTHESIA)

30 FOR LOCAL ANAESTHESIA - READ ON

31 CHECK THE SEDATION
EQUIPMENT AND MATERIALS

Lignocaine 4% spray (bottle at least half
full).

21 SWG green butterfly + 2 spares.

2ml syringe + 2 spares.

2ml Diazemuls (10mg.) nonexpired + 2 spares.

21 SWG green drawing up needle + 2 spares.

Alcohol swab.

3 10cm. lengths of 2cm. Micropore tape.
Tray.

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NUMBER

32 DRAW UP DIAZEPAM

Use Diazemuls.

Check the ampoule contains Diazemuls.

Check the ampoule is within its expiry date.

Draw up 10mg. (2ml.) into a 2ml. syringe
using a green top 21swg needle.

Draw up 2 syringes for a patient over 70kg.,
or for a patient who is shaking with anxiety.

33 EXPLAIN YOUR NEXT STEPS
TO THE PATIENT

34 SPRAY THE TONGUE AND MOUTH

Spray tongue and mouth with 3 sprays of
Lignocaine (30 mg.).

35 COMPRESS THE RIGHT
UPPER ARM

This will fill the antecubital veins.

36 GET THE PATIENT TO PUMP
HIS RIGHT HAND

This will also fill the veins in the
antecubital fossa.

37 FLICK AN ANTECUBITAL VEIN

This will make the chosen vein distend more.

If there is not a suitable visible or
palpable vein, try the dorsum of the right
hand.

Failing that, try the opposite antecubital
fossa and hand.

Call a more experienced person.

Consider doing the examination without
sedation. (This requires more application of
local anaesthetic, and is more difficult, but
is usually successful.)

38 INSERT A 21 SWG BUTTERFLY

Pull distally on the skin distal to the
right antecubital vein with your left
fingers.

Take careful aim with the butterfly in your right hand.

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NUMBER

38 CONT

Pop the butterfly needle through the skin 5mm. distal to the chosen site of venepuncture.

Wriggle the point of the needle up the vein until the whole of the bare length of the needle lies under the skin.

39 TAPE THE WINGS OF THE
BUTTERFLY TO THE SKIN

40 CHECK THERE IS BACK FLOW
DOWN THE BUTTERFLY TUBING

If not, wiggle and withdraw the needle 1-2mm.

If there is still no back flow, replace the butterfly.

41 LET THE BUTTERFLY TUBING
FILL WITH BLOOD

Remove the end cap, or aspirate with the Diazemuls syringe.

Avoid air remaining in the tubing.

42 PUSH THE SYRINGE ONTO
THE BUTTERFLY END

Or inject through the rubber end cap.

43 SPRAY THE ORO-PHARYNX
AND LARYNGO-PHARYNX

Use 3 sprays (30 mg.) of Lignocaine.

44 INJECT DIAZEPAM (DIAZEMULS)

Use about 0.1 mg. per kilogram. i.e. 1.5ml. (7mg.) for a 70 kilogram person.

Inject over 5 seconds.

Check the diazemuls is flowing intravenously.

If not, use a new butterfly in a different site.

Use less Diazemuls for a patient over 65 years, or a hypovolaemic patient.

45 RESPRAY THE ORO- AND
LARYNGO-PHARYNX

Use 3 sprays (30mg.) of lignocaine.

STEP
NUMBER

46 TURN THE PATIENT ONTO
A LEFT LATERAL POSITION

Check the patient keeps his right elbow straight to prevent dislodging the butterfly.

Raise the right hand trolley side.

Place a pillow between the patient's back and the trolley side.

The nurse stands behind the patient, holding the butterfly arm straight and ready to hold the mouthpiece.

Check the patient relaxes his neck and allows his head to drop towards his chest.

47 STAND ON THE PATIENT'S
LEFT SIDE

Face the patient's head.

48 SPRAY THE ORO AND
LARYNGO- PHARYNX

Use 3 sprays (30mg.) of Lignocaine.

49 INSERT A MOUTHPIECE

Check the mouthpiece is large enough to take the gastroscope.

Check the inner rim of the mouthpiece inside the teeth or gums.

Let the nurse standing behind the patient's back hold the mouthpiece in place with 2 fingers.

50 CHECK THE LEVEL OF SEDATION

You are aiming for a mild degree of sedation, i.e. the patient answers questions and follows instructions with a 2 second delay.

Blinking is at half the normal speed.

Nystagmus just begins to appear.

Excessive sedation leads to:

Trismus preventing insertion of the

mouthpiece

Loss of an ability to sniff (used later in the examination).

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NUMBER

50 CONT

A danger of inhalation of secretions particularly in a frail patient over 70.

Give more Diazemuls to obtain the ideal level of sedation.

2 or 3 times the normal dose may be needed for large young adult males.

51 ATTACH THE LECTURESCOPE

Place the lecturescope on the top of the gastroscope with the 2 yellow marks on each opposite one another.

Screw the lecturescope clockwise to fit firmly into the gastroscope.

52 HAND THE END OF THE
LECTURESCOPE TO THE STUDENT

Pass the end to your left to avoid the lecturescope hindering you later.

Get the student to check the focus by turning the knurled collar on his end of the lecturescope.

53 CHECK THE VIEW

If there is no view down the lecturescope, turn the lever on the side of the lecturescope .

54 INSERTING THE GASTROSCOPE - READ ON

55 LINE UP THE GASTROSCOPE

Hold the controls of the gastroscope with your left hand.

Use the rotation controls and the air, wash and suction controls with your left fingers.

You will be adjusting the pulling and pushing of the gastroscope with your right hand.

Place your right hand on the 20 cm. mark.

Rotate the gastroscope so that the lead from

the light source runs in a smooth curve, free from twists.

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55 CONT

(Beginners need to start with the gastroscop handle in the left hand , and the rotation controls in the right hand.

An experienced endoscopist should control the pushing and pulling of the gastroscop , and also supervise through the lecturlescope.)

56 REHEARSE FLEXING
THE GASTROSCOPE END

This is an essential preparation for negotiating the right angled bend at the back of the tongue.

Hold the gastroscop parallel to the long axis of the patient's body with the end pointing towards his head.

Rotate the large hand control on the gastroscop to flex the end of the scope to a right angle, still in the line of the axis of the patient.

Tilt and rotate the gastroscop, and rotate your shoulders to achieve this.

Do not be satisfied with anything but complete alignment.

Once you have the move correctly prepared, maintain your stance, and straighten the end of the gastroscop out again.

57 CHECK THE END OF THE
SCOPE IS LUBRICATED

Use KY jelly on the most distal 10cm., avoiding the lens area.

58 SLIDE THE GASTROSCOPE OVER
THE BACK OF THE PATIENT'S TONGUE

59 MAKE THE REHEARSED BEND
IN THE GASTROSCOPE END

Rotate the large gastroscop end control as before.

You will see the epiglottis and the larynx.

If not, pull out the gastroscop and check the alignment.

If the patient coughs and splutters, pull out the gastroscop.

STEP
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59 CONT Give more sedation and lignocaine spray and try again.

60 SLIDE THE GASTROSCOPE DOWN
BEHIND THE EPIGLOTTIS
You will see the fleshy false vocal cords with the true cords more distally.

Do NOT touch the false cords, or you will cause a violent coughing reflex.

61 SLOWLY SLIDE THE GASTROSCOPE
DOWN BEHIND THE BACK OF
THE LARYNX
Turn the controls so that the end of the gastroscop presses down between the back wall of the pharynx and the front wall of the larynx.

Try to keep in the midline.

If you pass a little to the left of the midline, that will be alright.

62 PASSING THE UPPER OESOPHAGEAL SPHINCTER - READ ON
This is the only part of the procedure which is done blind.

If there is gagging try some soothing chatter.

If that fails, use more Diazepam. You need to wait at this point until the patient collects himself to make a big swallow.

63 ASK THE PATIENT TO MAKE
A BIG SWALLOW

64 PUSH THROUGH THE SPHINCTER
Once you are through the sphincter, you will see the oesophagus opening out in front of you.

If you cannot get through the sphincter, Get the patient to swallow again.

Check you are in the midline.

Give more sedation.

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64 CONT Do not push hard, because the gastroscope may be in a pharyngeal pouch, or in a stricture.

If you still do not succeed, call a more experienced person.

65 FOR LOCAL ANAESTHESIA - GO TO STEP 71
(EXAMINING THE OESOPHAGUS)

66 FOR GENERAL ANAESTHESIA - READ ON

67 STAND AT THE PATIENT'S
HEAD FACING HIS FEET

68 INSERT THE LARYNGOSCOPE

Check the laryngoscope light switches on when the instrument is opened.

Hold the laryngoscope handle in your left hand with the handle uppermost and the blade facing towards the patient's feet (ie forward).

Slide the blade of the laryngoscope down the back of the patient's tongue.

Pull the blade forward so that you are pressing on the tongue and not on the upper incisor teeth.

Use the laryngoscope to lift the patient's tongue, the endotracheal tube and lower pharynx forward.

This will open up the space between the larynx and the upper oesophageal sphincter to allow easy passage of the gastroscope.

69 ASK THE ANAESTHETIST TO
PULL THE TRACHEA FORWARD

He does this by grasping the structures of the front of the neck with his hand.

70 PASS THE GASTROSCOPE

Check the gastroscope and its lead are lying in the line of the patient without kinks and twists.

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70 CONT

Have the scrub nurse holding the controls of the gastroscope in her right hand , and offering you the distal end with her right hand.

Check the end is lubricated with KY jelly for 10cm. but avoiding the lens area.

Slide the gastroscope down the back of the tongue, behind the endotracheal tube, and through the upper oesophageal sphincter.

If the gastroscope will not pass:
Try again.

Increase the anterior pull of the laryngoscope and the anaesthetist's hand.

Do the procedure under direct vision down the gastroscope.

Call a more experienced person.

Consider reducing the volume of air in the endotracheal cuff.

Consider a pharyngeal pouch or an oesophageal web or stricture.

71 EXAMINING THE OESOPHAGUS - READ ON

Look for:

Tumour

Submucous secondary nodules.

Tears

Ulcers

Inflammation

Varices, which do look like longitudinally running submucous varicose veins.

Stricture

External compression

Food bolus, bile, gastric juice,

blood.

The squamo-columnar junction.

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71 CONT

This is usually at 40 cms. from the incisor gums at the lower end of the oesophagus.

The normal squamo-columnar junction is a wavy line between the greyish pink of the squamous mucosa and the brighter pink of the looser columnar epithelium.

If the columnar epithelium is folded, you are probably looking at stomach in a hiatal hernia.

If the columnar epithelium is smooth, and high (such as 30cm. from the incisor gums), you are probably looking at a columnar lined oesophagus (Barrat oesophagus)

The site of the diaphragm:

Demonstrate this by seeing where the oesophagus or stomach is nipped when the patient sniffs.

Over-sedation will prevent this.

*** EVEN IF YOU FIND PATHOLOGY AT THIS LEVEL, CONTINUE THE EXAMINATION AS FAR AS YOU CAN TO CONFIRM DISTAL NORMALITY OR MULTIPLE PATHOLOGY

72 PASS THE GASTROSCOPE INTO THE STOMACH

If this is unexpectedly difficult, suspect a tumour at the lower end of the oesophagus or a rolling hiatal hernia.

73 PLAN TO GET THROUGH THE STOMACH AND INTO THE DUODENUM AS QUICKLY AS POSSIBLE

Perform the main examination of the stomach on your way back out again.

Inflate the stomach with air.

Warn the patient that he will feel as if he

has over-eaten.

Centre the lumen of the stomach in the

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NUMBER
73 CONT

middle of the viewing field in the
gastroscope.

Push the gastroscope through until the lumen
moves from the centre of the field.

Centre the lumen using the gastroscope
controls and repeat the process.

You should pass down the lesser curve of the
stomach towards the duodenum.

You will be following the gastric rugal
folds.

As you pass into the antrum of the stomach,
the rugal folds flatten off - a useful
landmark.

74 FIND THE PYLORUS

The pylorus is usually a 5mm. opening.

It can be completely closed off by spasm or
fibrosis, or obscured by peristaltic waves in
the antrum.

Take your time.

Beginners may benefit from relaxing the
pylorus by injecting 10mg. Hyoscine
intravenously.

75 PASS THROUGH THE PYLORUS

Centre the pylorus exactly on the gastroscope
and push the scope through.

This can be difficult and slow.

Try to follow a peristaltic wave through the
pylorus.

Warn the patient this may make him feel a
little sick.

If the scope will not pass, give 10mg.
Hyoscine intravenously.

If the scope will still not pass, call a more experienced person.

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76 PASS INTO THE DUODENUM

Push the scope through the pylorus into the first part of the duodenum.

77 PASS DOWN TO THE
AMPULLA OF VATER

To do this, you need to do a special manoeuvre.

This manoeuvre straightens the gastroscope from its present S shape running round the curve of the stomach, to a straight line running down into the second part of the duodenum.

Rotate your shoulders to the right so that you have your back to the patient.

At the same time, turn the Up control to maximum, and the Left control to maximum.

This should make the end of the scope pass further down the duodenum to the Ampulla of Vater.

The Ampulla is a 2mm. pinkish swelling on the medial wall of the second part of the duodenum.

The Ampulla lies at the distal end of a 20mm. longitudinal fold of mucosa.

This fold is unlike the other transverse folds.

Sometimes the fold obscures the Ampulla.

If you cannot find the Ampulla, simply record the fact.

78 EXAMINING THE DUODENUM - READ ON

Look for:

Ulcers

Duodenitis

Polyps

External compression

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79 EXAMINING THE PYLORUS - READ ON

Look for:

Stenosis

Inflammation

Ulcers tucked just distal to the pylorus.

80 EXAMINING THE STOMACH - READ ON

Move the controls so that the end of the scope views the stomach in a series of spirals as you withdraw the scope.

When the incisura of the stomach comes into view, like a web, turn the controls to turn the end of the scope back on itself to get a view of the fundus of the stomach.

Pull the scope out so that you get a clearer view of the fundus and the oesophago-gastric junction.

Reverse the end of the scope so that you can next examine the lesser curve of the stomach.

Tilt and roll the patient as necessary to move stomach contents around to get a clear view of the whole of the stomach mucosa.

This applies particularly when looking for 1 or more sources of bleeding.

Look for:

Ulcers

Erosions

Gastritis

Rigid wall in linitis plastica.

81 TAKING A BIOPSY - READ ON

These steps apply to taking a biopsy at any anatomical level in this examination.

82 PASS THE BIOPSY FORCEPS

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82 CONT

Have the scrub nurse holding the handle of

the biopsy forcep in her right hand, and offering you the distal end with her left hand.

Push the end of the biopsy forcep through the rubber cap on the upper end of the biopsy channel.

Feed the forcep wire down the biopsy channel until the biopsy jaws appear in the viewing field.

If the wire will not feed easily, straighten the gastroscope to reduce friction.

You may temporarily lose sight of your biopsy target to do this.

Avoid kinking the biopsy wire when pushing hard.

Replace a kinked biopsy forcep.

83 BIOPSY THE TISSUE

Have the nurse open the jaws.

If the jaws do not open:

Check the handle is fully opened.

Check the internal biopsy wire has not pulled out of the handle.

Replace the forceps.

Press the jaws firmly on the target tissue. Push the forceps further in, or push the gastroscope onto the tissue to do this.

Have the nurse close the jaws.

Pluck out the biopsy forcep.

Place the jaws in the formaldehyde bottle.

Have the jaws opened.

Flick the biopsy wire to release the specimen into the formaldehyde.

Examine the specimen.

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NUMBER

82 CONT

Dip the biopsy jaws into water to remove the formaldehyde.

Have the jaws closed.

Repeat the process for further biopsies at the same site and for H. pylori culture.

83 Check the jaws are completely clean and separate labelled bottles are used for biopsies at different sites.

84 REEXAMINE THE OESOPHAGUS

85 REEXAMINE THE PHARYNX

86 REMOVING THE GASTROSCOPE - READ ON

Make sure you allow the flexing controls to revolve freely as you pull the scope out.

This will allow the end of the scope to follow the curves of the oesophagus and pharynx as it slides up

87 HAND THE GASTROSCOPE
TO THE SCRUB NURSE

88 TAKE OUT THE MOUTH PIECE

89 GIVE THE PATIENT A
GAUZE TO WIPE HIS MOUTH

90 CONGRATULATE THE PATIENT
Leave elaborate explanations of the findings until the patient has recovered from the sedation.

91 FINAL TOUCHES - READ ON

92 FILL IN THE HISTOLOGY FORM

93 WRITE LEGIBLE OPERATION DETAILS

94 FILL IN THE SURGICAL AUDIT FORM

95 DICTATE AN OPERATION LETTER
TO THE GENERAL PRACTITIONER
PLUS

A COPY TO THE REFERRING PHYSICIAN

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96 END OF OPERATION

97 EQUIPMENT AND MATERIALS LIST
(FRIARAGE HOSPITAL)

EQUIPMENT

WHITE GASTROSCOPE TROLLEY
TRANSFORMER PLUGGED INTO BACK OF TROLLEY
TROLLEY PLUGGED INTO WALL SOCKET

ON TOP XP10
IT
TEACHING AID
BIOPSY FORCEPS
GREEN NEEDLE
FORMALIN BOTTLE X 2
BRUSH
RECEIVER
I/C SWABS
KY JELLY

ON BOTTOM
BOWL OF SAVLON AND WATER
BOWL OF WATER

SUCTION ATTACHED TO SCOPE + TO SUCTION BOTTLE ON DIATHERMY
MACHINE

DIATHERMY MACHINE PLUGGED IN

EQUIPMENT FOR SEDATION/LOCAL ANAESTHESIA

LIGNOCAINE SPRAY
1 X BUTTERFLY GREEN 21SWG
3 X 10MG DIAZEMULS
2 X 2ML SYRINGES
1 X SPIRIT SWAB
1 X DISPOSABLE TRAY
3 X 2.5CM WIDE PLASTER EACH 10CM LONG

