

# Lights, cameras, action...

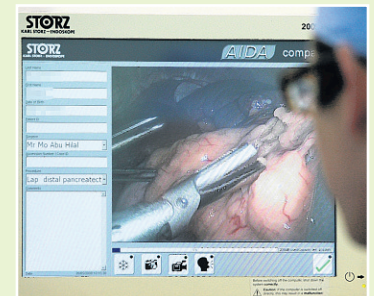


Mr Mohammed Abu Hilal and a registrar at work

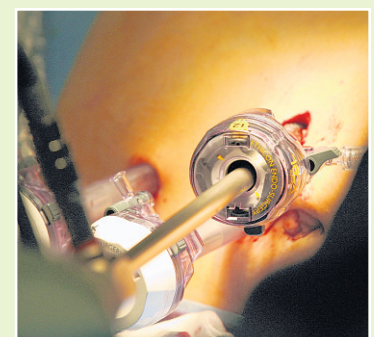
## HOW DOES KEYHOLE SURGERY WORK?



- STEP 1:** With their patient under general anaesthetic, the surgeon inserts a small metal tube called a cannula into the patient's abdomen.
- STEP 2:** Carbon dioxide is then used to inflate the abdomen to create space in which the surgeon can operate.
- STEP 3:** A telescope, with a miniature video camera mounted on it, is inserted into this tube to project a very high quality video image onto a television screen.



- STEP 4:** The operation is performed by inserting specialised instruments, which are passed through small hollow tubes which are inserted through separate very small incisions.



- STEP 5:** Once the operation is over, the surgeon stitches up the inside of the holes and the patient is taken to the recovery room to wake up from the anaesthetic.
- STEP 6:** The keyhole technique is used to remove a number of organs as well as the pancreas, including the gall bladder, appendix, liver and bile duct.

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THE LIGHTS ARE DIMMED AND a hush falls over the theatre.

All eyes are focused on one of two screens, illuminated in the darkness, as Mohammed and his team begin their painstaking work.

There is not much to see. The patient, who is tilted onto her side towards the surgeon, is completely covered with blue paper sheeting apart from a small section of her abdomen.

There, four small incisions have been made, each no more than seven-mm wide, as she lies on a raised metal-framed bed in the middle of the room.

Into the holes go a camera, forceps, electric dissectors and staplers.

As the blue sheeting gently rises and falls with the patient's breathing, the team appears relaxed but totally focused on the task ahead of them.

Keyhole surgery demands an extremely high level of skill as surgeons have to learn a completely new way of working without using their hands directly.

Their 43-year-old patient has a large cyst on her pancreas, which the team will remove today.

The screen in front of the surgeon is linked up to the camera, now inserted approximately five to ten cm into the patient's body.

It picks up a clear view of her insides – a shock of reds, purples, yellows and pinks.

The pancreas, stomach and liver can all be seen as the camera is continually repositioned.

As can the cyst – white with a blue inside – in the tail of the pancreas, it will require careful preparation before it can be removed.

The team, dressed in their regulation blue scrubs, have a lot to do.

First they must mobilise the pancreas from the surrounding organs and vessels, then they will divide the organ and remove the cyst.

This involves cutting away the affected part of the pancreas and often removing the spleen, which it becomes attached to.

A mass of up to 15cm can be squeezed out of an incision of 3cm-4cm.

Softly spoken anyway, Mr Abu Hilal's voice is muffled by his facemask but his commands ("suction please", "scissors please") are swiftly acted upon by his scrub nurse.

Holding the long instruments in each hand, Mr Abu Hilal watches the screen as he makes tiny movements.

A tray full of long handled instruments, gauzes and piping, are on the left hand side of the bed and a massive circular space-age like lamp, which remains switched off, hangs above the bed.

Huge machines surround the bed flashing green and red, with leads and pumps trailing everywhere.

A beep at steady intervals is often the only sound filling the room.

Holding the long instruments in each hand, Mr Abu Hilal watches the screen as he makes tiny movements.

The intricacy of what he is doing is amazing but he remains cool and calm throughout as he cuts decisively through the delicate flesh as he reaches through the holes with the tiny pincers.

Believed to be the only surgeon in the

country who has got into double figures, this is the 13th time he has performed this procedure.

There are around 15 people in the theatre. Standing right next to Mr Abu Hilal are two senior registrars who are directly assisting him, and across the bed is the scrub nurse handing the surgeon his instruments.

There is also the specialist anaesthetist, sat by the patient's head which is screened off from view, surrounded by monitors and tubes.

There are also senior nursing staff, screen operators and medical students in the room.

It is truly a team effort.

"It doesn't need just a good surgeon, it needs a big team," Mr Abu Hilal stresses to me later, extremely keen to name check everyone from the chief executive of the health trust to the secretaries.

Also in theatre today is Southampton General's technical team, as the surgery is being screened live to a conference of 150 surgeons in Dundee.

As the procedure is still in its infancy, many are keen to learn more about it.

Mr Abu Hilal's skills are in such high demand that professionals from as far afield as India, America and Europe had travelled to the Scottish city to watch him at work.

During the procedure, he is miked up and talks regularly to the group to explain why he's doing what he's doing.

The operation – which lasts for three-and-a-half hours – goes smoothly.

After just an hour's break, Mr Abu Hilal is back in theatre performing a liver operation.

The pancreatic patient returned to her home in Jersey after four days.