

PERRY SHEN: This is a middle-aged woman who has metastatic appendiceal cancer. And she has already undergone the cytoreductive part of her surgery. She's had all her tumor removed. And we are preparing to perform the hyperthermic intraperitoneal chemotherapy.

The patient's head is toward the right of the screen, and the feet are toward the left. We're making incisions in the abdominal wall for placement of intraperitoneal chemotherapy cannulas through which the chemotherapy perfusate is going to be infused into the abdominal cavity and through which the fluid is going to be drained from the abdominal cavity.

Typically, we will use two inflow cannulas, which are the smaller of the two cannulas. Those are in the upper part of the abdomen. And then we have two outflow cannulas, which are larger. You can see we place these through the subcutaneous tissue of the abdominal wall and then go into the abdominal cavity. We do not go through the muscle.

These are suction catheters that are being placed on the outflow cannulas. And they help to prevent any fat or intestine from sticking to the cannulas when the fluid is flowing out. And these are directed into the upper part of the abdomen, above the liver and above the stomach. The inflow cannulas, those smaller cannulas, are then directed into the pelvis.

My assistant and I are now closing the skin of the abdominal cavity in preparation for the chemotherapy perfusion. The important issue here is to make the closure watertight, as we do not want any chemotherapy leaking out from the abdominal cavity,

The perfusion typically lasts approximately two hours. And we also heat the fluid to a temperature of about 41 degrees centigrade.

So you can see, the abdomen is fully closed at this point in time. And now the inflow/outflow cannulas are being hooked into Y connectors in preparation for attachment to the perfusion machine. The cannulas are being sewn to the abdominal wall. There the inflow tubing is being connected to the inflow cannulas.

Once both the tubing for the inflow/outflow cannulas have been connected to the perfusion machine, a normal saline initial perfusate is flushed into the abdominal cavity. We use approximately three liters of fluid to create a circuit.

The perfusion machine also heats up the fluid. And once we reach the appropriate

temperature-- we use an outflow temperature of about 39.5 degrees centigrade, and this gives us an interabdominal temperature of about 41 degrees centigrade.

Once we have that circuit primed and the appropriate outflow temperature, then the chemotherapy is dropped into the perfusate. You can see the outflow temperature on the bottom is at least 39.5 degrees.

For this perfusion, we used mitomycin C. And sometimes we use oxaliplatin. These are the two main chemotherapeutic agents we use for our hyperthermic intraperitoneal chemotherapy perfusions.

During the perfusion, we do manually agitate the abdomen to help distribute the drug throughout all the peritoneal surfaces. The catheter in the upper right hand corner is actually the patient's chest tube.

So here the perfusion has been finished. It's been two hours. At the end of the perfusion, the abdomen is flushed with the normal saline. And now the skin is being reopened. And the cannulas will be removed.

Any excess fluid is suctioned out. All the cannulas, tubing, are placed in a biohazard disposable bag, given the fact that they were exposed and were used to administer chemotherapy. The abdominal contents are inspected for any bleeding or injury.

And once everything is felt to be clear, then the abdominal wall fascia closure is started here. This is closure of the abdominal musculature. The abdominal wall musculature is now closed.

And the next step is to close the subcutaneous fat using additional layers of suture. Once that layer is completed, the next layer will be the skin. This is performed using staples. Now that the skin is closed, this patient is having a negative pressure dressing placed to help reduce wound infection.