

Poster presentation

Laparoscopic abdominal shunt revisions in children

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Background

Abdominal complications of ventriculo-peritoneal shunt systems are too short catheters, disconnections of the distal catheter, the development of intraperitoneal pseudocysts or peritoneal absorptive failure. There are many well-known problems related to abdominal shunt surgery, such as difficulties in reaching the abdominal cavity because of pseudocysts or enteric adhesions. In some cases it might be difficult and time-consuming to locate and remove lost catheters by open surgery. Especially in adipose patients the repositioning of the distal shunt can be difficult.

Materials and methods

In the time between 1996 and 2005 we used the laparoscopic abdominal revision with 74 children with Hydrocephalus aged from 5 to 16 years, in the last 5 years with a single-trocar-technique. The approach is a small umbilical incision and the 5 mm optical system (optic) with integrated 3.5 mm working channel allows access to the abdominal cavity, adhesions and the free peripheral catheter without additional incisions. The catheter can be disconnected at the lower valve connector (using a small incision behind the ear) and connected to the new (longer) drainage system. This one will be pulled into the abdominal cavity of the old catheter. Peripheral catheters which do not reach into the free abdominal cavity any more can be implanted again safely with an adapted puncturing technique.

Results

The Operation times lasted from 17 to 42 minutes. The cosmetic results were good. It was not possible to implant the peripheral shunt system into the abdominal cavity using the laparoscopic approach in 5 cases because of laparoscopically visible pseudocysts and chronic inflammation of the peritoneum, making it likely that absorptive failure would occur. In these cases we performed a ventriculo-atrial shunt implantation.

Conclusion

We recommended the laparoscopic procedure in all cases of abdominal shunt blockage. The 5 mm laparoscopic optical device is sufficient in most cases to give a good view inside abdomen and to control the insertion and catheter replacement. The operation is easy to perform and less invasive than a conventional laparotomy. We have short operation times and good cosmetic results especially in adipose patients. The hospitalisation time is reduced. If necessary additional operative steps in the abdominal cavity are possible without any problems.