

Laparoscopic Cholecystectomy in Acute Cholecystitis Patient with Ventriculoperitoneal Shunt

Ventriküloperitoneal Şantı Olan Akut Kolesistitli Hastada Laparoskopik Kolesistektomi

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SUMMARY

With the improvement of ventriculoperitoneal shunting techniques and improvement in medical therapies, patients with hydrocephalus are living longer and are more likely presented with other medical problems. A-21-year-old female patient was admitted to our Emergency Department with the complaint of nausea, vomiting and abdominal pain. Her medical history showed she had ventriculoperitoneal shunt (VPS) 10 years ago due to hydrocephalus and 6 months ago her shunt was replaced due to shortening of the shunt because of her aging. Abdominal ultrasonography showed there were multiple milimetric calculi at gallbladder and increase in the tickness of wall of the gall bladder. She had operated under routine general anesthesia. Laparoscopic cholecystectomy was performed. Laparoscopic cholecystectomy is a safe and conservative method in patients with normally working VPS (without any obstruction or with unworking valve system).

Key words: Cholecystectomy; laparoscopy; ventriculoperitoneal shunt.

ÖZET

Ventriküloperitoneal şant tekniklerinin ilerlemesi ile beraber hidrosefalisi olan hastalar daha uzun yıllar yaşayabilmekte ve böylece farklı hastalıklar ile karşımıza çıkabilmektedir. Yirmi bir yaşında kadın hasta acil servisimize karın ağrısı, bulantı ve kusma şikayeti ile başvurdu. Hastanın tıbbi geçmişinde, 10 yıl önce hidrosefali tanısı ile ventriküloperitoneal şant takılmış ve 6 ay önce yaşa bağlı olarak şantın kısa gelmesi nedeni ile şant değiştirilmişti. Karın ultrasonografisinde safra kesesinde çoklu milimetrik taşlar ve safra kesesi duvar kalınlığında artış saptandı. Hasta genel anestezi altında ameliyat edildi. Laparoskopik kolesistektomi yapıldı. Laparoskopik kolesistektomi bu hastalar için güvenli ve konservatif bir yöntemdir (normal çalışan valvi olan şantlı hastalarda).

Anahtar sözcükler: Kolesistektomi; laparoskopi; ventriküloperitoneal şant.

INTRODUCTION

With the improvement of ventriculoperitoneal shunting techniques and improvement in medical therapies, patients with hydrocephalus are living longer and are more likely presented with other medical problems. Until recently, the presence of ventriculo-

peritoneal shunt (VPS) was considered as an absolute contraindication for laparoscopic surgery. In some cases intraabdominal insufflation causes a rapid sustained increase in intracranial pressure (ICP). Such hypertension may result in hindbrain herniation.^[1] It can be disconcerting to discover that the patient who

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needs a routine laparoscopic procedure also has a VPS. The literature has limited source about this subject. There are only a few case reports in the literature on laparoscopic surgery in patients with VPS.

In this study, we report a case of acute cholecystitis underwent laparoscopic cholecystectomy with routine general anesthesia in patients with VPS.

CASE REPORT

A-21-year-old female patient was admitted to our Emergency Department with the complaint of nausea, vomiting and abdominal pain. Her physical examination revealed epigastric sensitivity and murphy sign positivity. There were two abdominal scar at right upper quadrant. Her medical history showed she had VPS 10 years ago due to hydrocephalus and 6 months ago her shunt was replaced due to shortening of the shunt because of her aging. Abdominal ultrasonography showed there were multiple milimetric calculi at gallbladder and increase in the thickness of wall of the gall bladder. There was no pericholecystic fluid detected. She referred to neurosurgery and there was no contraindication due to VPS detected because of shunt valve characteristic. She had operated under routine general anesthesia. Laparoscopic cholecystectomy was performed. During operation there was leakage from the tip of the shunt was shown, this showed us VPS was working correctly. After the beginning of bowel sounds fluids was started post-operatively and at the first postoperative day she was discharged from the hospital.

DISCUSSION

The literature is limited there is small body of evidence indicating that it is safe to perform laparoscopic cholecystectomy on patients with VPS under routine general anesthesia.^[2] Until recently, laparoscopic procedures was the absolute contraindication in these patients due to rapid increase in ICP in cause of intraabdominal insufflation and results in hindbrain herniation.^[2] To prevent this, the use of lower abdominal pressures, intraoperative ICP monitoring, VPS catheter clamping and intraoperative ventricular drainage has been reported in some studies.^[3,4]

In patients with VPS, increases in ICP during in-

sufflation is more sustained than other patients. VPS has a one way valve which can withstand pressures of 300 mmHg and prevent reflux of intraabdominal fluid.^[5] In the presence of an incompetent shunt valve, retrograde insufflation of cerebrospinal fluid may also contribute to the increase in ICP intraoperatively. Furthermore, acute distal shunt obstruction with soft tissue in abdomen during insufflation may occur. However, the risk of retrograde failure of the valve system has also been shown to be minimal even with intraabdominal pressures as high as 80 mmHg.^[6]

There is limited literature with some case reports that it is safe to perform laparoscopic cholecystectomy in patients with VPS.^[5,7] To minimize changes in ICP and the risk of hindbrain herniation in patients with VPS, studies have reported using lower insufflation pressures during laparoscopy.^[8] In our case, we performed laparoscopic cholecystectomy with routine general anesthesia without shunt clamping or ICP monitorization and we noted to flow from the end of the shunt when intrabdominal pressure was 12-15 mmHg. And patients recover well with no neurological sequel.

As a result, laparoscopic cholecystectomy is a safe and conservative method in patients with normally working VPS (without any obstruction or with unworking valve system).

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