Abstract: Achoondroplasia is a form of short-limbed dwarfism. The main objective of this report is to present the anatomical and anesthetic challenges for laparoscopic cholecystectomy in achondroplastic dwarf. Orthopedic abnormalities of achoondroplasia (ACH) alter the anatomy such that access and exposure is extremely difficult. Such anatomical challenges dictate the type of approach necessary, and whether or not surgery is feasible. The first step in a laparoscopic procedure is to access the peritoneal cavity in order to establish pneumoperitoneum. Due to lack of space in ACH dwarfism, surgeons think it inappropriate for the laparoscopic approach.

We reported a 32-years-old achoondroplastic dwarf male with body height of 121 cm presented with symptoms of acute cholecystitis which was planned for emergency laparoscopic cholecystectomy. Patient was positioned in the supine position with head up left tilt. Four post incisions were made (10 mm umbilical (camera) port, 10 mm epigastric port, 5 mm right subcostal post and 5 mm right lateral post). Pneumoperitoneum is maintained with CO2 gas with the average pressure of 12 mm/Hg during surgery. Distended, inflamed and edematous gall bladder was found with few adhesions. Calot triangle was carefully dissected. Cystic duct and cystic artery were ligated and transected. Gall bladder was separated from liver bed by careful dissection. Pus with multiple pigmented stones found in lumen of the gallbladder. Blood loss was minimal (20 ml) and operative time was of about 50 minutes. The patient was extubated uneventfully. He was ambulatory and started on liquid diet within 6 hours of the surgery. Patient was discharged on the 2nd post-operative day.

Case report continue…

The gallbladder was carefully dissected from liver bed and was extracted through the mid-epigastric port. Multiple pigmented stones were found in lumen of the gallbladder. Blood loss was minimal (20 ml) and operative time was of 50 minutes. The patient was extubated uneventfully. He was ambulatory and started on liquid diet within 6 hours of the surgery. Patient was discharged on the 2nd post-operative day.

Discussion

Achoondroplasia is the most common form among the different types of osteochondrodysplasia that cause dwarfism. It is a form of short-limbed dwarfism. The word achoondroplasia literally means "without cartilage formation", however, in achoondroplasia the problem is not in forming cartilage, but in converting it to the bone (a process called ossification), particularly in the long bones of the arms and legs. In achondroplasia, bone growth is blocked in the upper part of the legs and in the trunk. This can cause a person to be shorter than normal, with particularly short upper arms and thighs, limited range of motion at the elbows, and an enlarged head (macrocephaly) with a prominent forehead. Fingers are typically short and the ring finger and middle finger may diverge, giving the hand a three-pronged (trident) appearance. People with achoondroplasia are generally of normal intelligence.

Our patient has no history of previous surgery; his body habitus was typical of childhood, with short stature. One important surgical concern when performing abdominal surgery in patient with dwarfism is the selection of an appropriate surgical approach. Due to altered body habitus, patients with achoondroplasia are at high risk of ventilator defects, and cardiac problems.5 Since this disease is associated with difficult intubation, restrictive diet within 6 hours of the surgery. Patient was discharged on the 2nd post-operative day. We have described our experience of the standard laparoscopic approach in achoondroplasia patient, which is safe and feasible in altered habitus. While considering dose of analgesic medication in achoondroplasia with body-weight, we found it is insufficient to control pain and should be considered like in an adult dose.

Conclusions

Here, we have described our rare experience of the standard laparoscopic approach in achoondroplasia patient, which is safe and feasible in altered habitus. While considering dose of analgesic medication in achoondroplasia with body-weight, we found it is insufficient to control pain and should be considered like in an adult.

References