PII2: ROBOT-ASSISTED THORACOSCOPIC CORRECTION OF A LATE ON-SET CONGENITAL DIAPHRAGMATIC HERNIA

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Background Congenital diaphragmatic hernia (CDH), is a major malformation, most commonly found in newborns. CDH is defined by the presence of an orifice in the diaphragm, more often to the left and postero-lateral, that permits the herniation of abdominal contents into the thorax. Rarely, these hernias present later in life, some even in adulthood. Many approaches have been tried for such pathology. We present the first case of robot-assisted thoracoscopic correction of CDH.

Materials and methods We present a 27 year old patient who was referred to our center being specialized in surgical correction of congenital thoracic anomalies. Medical history revealed three episodes of pneumonia during infancy; he also had suffered from chronic back pain in the last 10 years. A thorax Computed Tomography (CT) confirmed the diagnosis of left postero-lateral diaphragmatic hernia (Bochdalek hernia) with herniation of fat tissue. We then proposed a robot-assisted thoracoscopic correction. One-lung ventilation was conducted through the whole procedure. We used the DaVinci Xi Robotic Surgical System, using 4 8-mm ports (1 optical, 2 working and 1 assistant ports). We resected the omentum through a laparoscopic ligasure device at the entrance of the thorax. We then proceeded with the suture of the defect (simple interrupted suture in non-adsorbable braided material). The fat tissue previously resected was removed by widening one of the trocar ports (2 cm incision). Two thoracic drains were put in place and then removed on the III post-operative day (no significant out-put registered). Post-operative course was uneventful and the patient was discharged on day IV. Chest x-ray on a one-month check was normal (no effusion or hernia).

Results Diaphragmatic hernias are rare among adult population; in this case we presented a symptomatic patient treated successfully with a robotic thoracoscopic approach. The surgical approach for the resolution of this pathology is variable; robotic thoracoscopy could be a feasible, safe and valid alternative to CHD correction in selected cases.

Conclusions A Bochdalek hernia is a congenital defect of the diaphragm located in the posterior insertion. They are generally discovered in neonates thanks to pre-natal ultrasound screening and the early respiratory distress in the first hours of life. Late on-set diaphragmatic hernia in older children or even in adults is extraordinary, like in our case. While most of these hernias are symptomatic and present with pain or complications such as strangulation, there are others that are detected incidentally during investigations for another cause. From the analysed literature, it is clear the most frequent symptoms found in adult patients are slight respiratory and digestive symptoms. The majority of authors agree that for congenital diaphragmatic hernia, surgical repair should be performed as soon as the diagnosis is confirmed in order to avoid serious complication such as incarcerated bowel, intra-abdominal organ dysfunction or severe pulmonary disease. Many surgical approaches have been proposed for this pathology, both open (laparatomy or thoracotomy) and minimally-invasive (laparoscopic or thoracoscopic). As matter of fact in the last 10 years we have gained a certain experience in the thoracoscopic correction of CDH. In this case, we had the opportunity to apply successfully the robotic assistance to thoracoscopy.

Key words congenital diaphragmatic hernia, robot assisted thoracoscopy