

NOVEL HYBRID TECHNIQUE FOR TRANSUMBILICAL CHOLECYSTECTOMY: INITIAL EXPERIENCE OF A PROMISING APPROACH



Martínez-Ferro M, Domínguez G, Millán C, Albertal M, Bignon H, Buela E, Bellia G, Rabinovich F
Fundación Hospitalaria – Hospital Privado de Niños Buenos Aires – Argentina

Background: We already published our original experience ⁽¹⁾ with magnet-assisted transumbilical cholecystectomy that enables optimal visualization and triangulation. Nonetheless, this technique requires the use of two Internal magnets (IM), which may result cumbersome and entail a longer learning curve due to the potential for magnet collision. To simplify the procedure, we describe a novel hybrid technique that allows adequate triangulation with only one IM.



External view . Two trocars and 1 external magnet.



Umbilical site with 2 ports. Grasper introduced through a 5mm flexible port

External magnet

Internal magnet (IM)

0° degree scope with working channel

Curved grasper

Flexible 5mm Trocar



An IM holds the gallbladder fundus as a curved grasper retracts the infundibulum



Immediate postoperative aspect of the umbilical site

Methods: The technique involves the combined use of one IM attached to an alligator clamp (IMANLAP®, Buenos Aires, Argentina) and a long gently curved 5mm x 45 cm, non-roticulating dissector (Karl Storz®, Tuttlingen, Germany). Through a median 1.7-cm transumbilical incision, two trocars (12-mm and flexible 5-mm) are introduced. Then, an 11-mm, 0° laparoscope with a 27-cm long, 6-mm working channel (Karl Storz®, Tuttlingen, Germany) is inserted through the 12-mm trocar. The IM is introduced into the abdominal cavity using the working channel to provide cephalad retraction of the gallbladder fundus. After that, the flexible trocar is used to introduce the curved grasper, which grabs the infundibulum, providing counter-traction with exposure of the Calot's triangle and optimal critical view. Using the 6-mm working channel, the hilum is dissected with hook cautery, and the cystic duct and artery are clipped and divided.

Results: 15 pediatric patients successfully underwent hybrid transumbilical cholecystectomy. The average age was 14±3.5 years (range 8–18) and the average weight 62.5±16.9 kg (31–81). Mean operative time was 62±8.4 min (50–70). Length of stay was 1.4±0.6 days. No patient required conversion to either a conventional laparoscopic cholecystectomy or open cholecystectomy. There were no in-hospital complications.

Conclusion: Hybrid transumbilical cholecystectomy combining one magnet and a curved dissector appears to be a feasible and safe technique for transumbilical cholecystectomy.

References:

- 1) Domínguez G, Durand L, De Rosa J, Danguise E, Arozamena C, Ferraina PA. Retraction and triangulation with neodymium magnetic forces for single-port laparoscopic cholecystectomy. *Surg Endosc* 2009;23:1660-6.