

## Instrumentation (con't.)

### UNIQUE HOOKED ROD DELIVERY SYSTEM FOR U-CLIPS IN MINIMALLY INVASIVE PEDIATRIC SURGERY

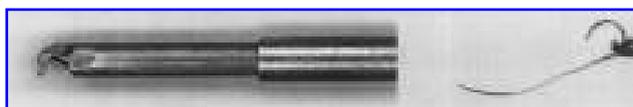
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**OBJECTIVE:** Coalescent surgical does not offer a system for thoroscopic or laparoscopic delivery of U-Clips (Coalescent Surgical, Sunnyvale, CA), through 3 mm ports. The goal of this study is to develop and test an instrument that facilitates transport of 5mm U-Clips through 3mm laparoscopic ports.

**METHODS:** The instrument constructed conceptually had two components an introduction sleeve and a hooked deployment rod. Materials were obtained from a local hobby shop. A 3/32 inch diameter brass rod and a 1/8 inch diameter brass round tube were purchased for \$1.31 (K&S Eng. Chicago, IL stock #127+ 163). A hook was created at the tip of the 3/32 brass rod. This hooked deployment rod was then passed through the introduction sleeve. The needle on the U-Clip system was straightened to a ski shape to fit into the delivery system. The U-Clip is grasped by the hooked deployment rod and pulled into the introduction sleeve. Then entire assembly can then be passed into any body cavity through a 3mm trocar.

**RESULTS:** After IACUC approval was obtained, the instrument was used to deliver S50 and S60 U-clips for thoroscopic esophageal reconstruction in four, 4Kg piglets. S50 and S60 U-clips were passed into and out of the introduction sleeve without any misfires even after remaining in the sleeve for >10 minutes. There was one non-survival training piglet, and three piglets that were survived > 2 months. After being transported through the 3mm ports all of the clips functioned as expected in the esophageal anastomoses

**CONCLUSIONS:** This easily constructed, inexpensive delivery system can be used safely and effectively to deliver 5mm U-Clips through 3mm ports.



## Neonatal

### THORACOSCOPIC REPAIR OF SHORT AND LONG GAP ESOPHAGEAL ATRESIA

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**Objective:** To evaluate feasibility and results of thoracoscopy in various types of esophageal atresia (EA).

**Material:** From april to august 2002, 6 patients with EA were cured by thoracoscopy. Mean gestational age was 37 weeks and mean birth weight was 2700g. Three were short gap atresia with tracheo-esophageal fistula. Three were long gap atresia: 2 with low fistula to the carina and 1 without fistula.

**Method:** Patients were placed in a prone position with the right side elevated at 80°. Four intrapleural ports were necessary. The fistula when present was dissected and sutured with intrathoracic knots and oesophageal anastomosis performed in the same manner.

**Results:** Positive airway pressure related to mechanical ventilation increased in all patients after insufflation of pneumothorax, but was kept in a safe range with respect to the risk of lung pressure injury.

The esophageal anastomosis was performed in 4 cases ( 3 short gaps and 1 long gap). Oral feeding started on day 6. Mean length of hospital stay was 14 days.

In 2 cases with long gap, the anastomosis were impossible and the gaps were only approximated. Thanks a "spontaneous" repermeabilisation normal feeding was possible 2 months later.

**Conclusion:** The thoracoscopic repair of an esophageal atresia is a reasonable choice for experienced surgeons including for long gaps.

### LAPAROSCOPIC TREATMENT OF DUODENAL OBSTRUCTION IN NEONATES

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**Aim :** We report our experience in the laparoscopic treatment of duodenal atresia in neonates.

**Patients / Methods:** 4 patients were operated on this 2 last years, 3 of them in the first day of life (duodenal atresia) and 1 at 7 day-old (perforated web). The child were placed in a supine position, with no rotation. The surgeon stood at the bottom with the cameraperson to his right and the second assistant to his left. The screen was at the right upper end. A 30 degrees 5-mm telescope through the superior umbilical was inserted (open). Pneumoperitoneum with a pressure of 8 mmHg was performed. Three 3 mm instruments were inserted. Duodenoduodenostomy was performed in the 3 patients with duodenal atresia, duodenoplasty was performed for the patient with web. For 1 patient, an esophageal atresia was operated at the same time by thoracoscopy. Others had no associated malformation.

**Results :** Mean operation time was 90mn ( 85- 95 mn). There were no complication. Mean hospital stay was 14 days. The mean follow up is 12 months and the patients had no complications related to this operation.

**Conclusion :** We consider this operation as safe and feasible by laparoscopy in neonates.