DOUBLE-BALLOON ENTEROSCOPY IN THE MANAGEMENT OF PEUTZ-JEGHERS SYNDROME

Miguel Serrano1, Susana Mão de Ferro1,2, Rolando Pinho3, Sara Ferreira1,2, Isabel Claro1,2, Miguel Mascarenhas-Saraiva3
1Department of Gastroenterology, 2Familial Cancer Risk Clinic: IPOLFG, EPE, Lisbon, Portugal; 3Laboratório de Endoscopia ManopH, Porto, Portugal

INTRODUCTION
- Peutz-Jeghers syndrome (PJS) is an autosomal dominant hereditary disease characterized by gastrointestinal (GI) polyposis, mainly in the small-bowel and mucocutaneous pigmentation
- Small-bowel polyps frequently give rise to symptoms and may result in acute obstruction requiring emergency laparotomy in up to 60% of patients by the 2nd decade of life
- In addition, patients with this disorder carry a significantly increased risk for the development of GI and non-GI cancers
- Double-balloon enteroscopy (DBE) has the advantage of combining in a single procedure diagnostic and therapeutic interventions, although little is known about the clinical impact of this technique in patients with PJS

AIMS AND METHODS
To assess the therapeutic efficacy and safety of DBE in the management of small-bowel polyps in PJS patients.
- All patients had at least one polyp with a diameter >10mm at capsule enteroscopy (CE) and underwent DBE for polypectomy
- DBE was performed at two institutions (IPOLFG and ManopH) with the Fujinon EN-450T5 (Fuginon Inc, Saitama, Japan) enteroscope under deep sedation with propofol and on an outpatient basis
- Insertion route was determined by the findings of CE
- We performed polypectomy by using a standard snare and blended current

RESULTS
Between January 2006 and March 2011, 20 patients with PJS were included in the analysis (Table 1).

TABLE 1. Patient characteristics

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<tr>
<td>Mean age at first DBE ± SD (range)</td>
<td>35.1 ± 14.0 (17-64)</td>
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<tr>
<td>Mean age at PJS diagnosis ± SD (range)</td>
<td>18.5 ± 5.5 (10-25)</td>
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<td>STK11 mutation</td>
<td>7/7* (100%)</td>
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<td>History of small-bowel surgery</td>
<td>80.0%</td>
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In total, 34 DBEs were performed, the majority with an anterograde approach. Polypectomy was performed in 82.0% of the procedures (Table 2).

TABLE 2. DBE procedures

| Total no. of DBEs | 34 |
| Mean no. of DBEs per patient (range) | 1.7 (1-5) |
| Route of DBE | Oral 32, Anal 2 |
| Mean procedure duration ± SD (range) (in minutes) | 89 ± 30 (45-150) |

Insertion depth
- Proximal jejunum | 3 (8.8%) |
- Mid-jejunum | 9 (26.5%) |
- Distal jejunum | 6 (17.7%) |
- Proximal ileum | 9 (26.5%) |
- Mid-ileum | 4 (11.8%) |
- Distal ileum | 2 (5.9%) |
- Total enteroscopy | 1 (2.9%) |
- Procedures with polypectomy | 82.0% (28/34) |

In 6 DBEs no polypectomy was performed (3-only minor polyps detected, i.e. <10mm; 3-polyps not amenable for endoscopic resection).

In total, 134 polypectomies were performed per session (Table 3 & Picture 2).

TABLE 3. Polyps and polypectomy procedures

| Mean size ± SD (range) (mm) | 27.7 ± 13.9 (5-60) |
| Total no. of polypectomies | 134 |
| Mean no. of polypectomies ± SD (range) | 4.8 (1-13) |

The majority of polyps (77.0%) were located in the proximal/ mid-jejunum (Picture 1). Approximately 5 polypectomies were performed per session (Table 3 & Picture 2).

Complications & management
- 3/28 therapeutic DBE
  - Minor delayed bleeding (2*)
  - Mucosal tear (1)**
*conservative management
**endoscopic management (endoclips)

CONCLUSIONS
DBE SHOWED TO BE A SAFE AND EFFECTIVE TECHNIQUE IN THE MANAGEMENT OF SMALL-BOWEL POLYPS IN PJS PATIENTS, ALLOWING A PRESYMPTOMATIC AND NON-SURGICAL APPROACH