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Title: Endoscopic laser-assisted management of pediatric airway lesions: A single institution experience

Dr. Juan L. 15006 Antón-Pacheco janton.hdoc@salud.madrid.org MD , Dr. Carmen 15011 Luna cluna.hdoc@salud.madrid.org MD , Dr. Gloria 15022 García-Hernández ggarh.hdoc@salud.madrid.org MD , Dr. Francisca 15023 Gómez-Acebo fgoma.hdoc@salud.madrid.org MD and Dr. Miguel A. 15024 Villafruela mvilla.hdoc@salud.madrid.org MD . ¹ Pediatric Airway Unit & Division of Pediatric Surgery, Hospital Universitario 12 de Octubre, Madrid, Spain, 28041 .

Body: Background: Laser endoscopic surgery is increasingly being used in the treatment of pediatric airway disorders. Aims: We evaluated the outcomes of laser therapy in a selected group of patients with congenital and acquired airway lesions. Methods: The medical charts of patients who were treated for airway disorders with diode laser between January 2008 and December 2011 at a tertiary care children's hospital were reviewed. All the procedures were performed endoscopically using rigid or flexible instruments. Data included relevant history and physical examination, diagnostic work-up, number of laser procedures, complications, and outcomes. Results: 37 patients who had laser surgery were identified, 13 girls and 24 boys with a mean age of 20 months (range, 3 days-12 years). 47 laser surgeries were performed, representing 1.2 procedures per patient. Indications for laser therapy were: Laryngomalacia 11 cases (29%), granulation tissue 8 (21%), vocal cord paralysis 7 (19%), laryngeal stenosis 5 (13%), vascular-lymphatic malformation 3 (8%), subglottic cyst 1 (2.7%), congenital tracheal stenosis 1, and papillomatosis 1 case. In 7 patients (19%), other concomitant endoscopic procedures were performed. Two complications were identified: Postlaser bleeding and aspiration in one patient, and subcutaneous emphysema and pneumothorax in another patient. In 89% of patients, partial or complete clinical improvement occurred after laser therapy. Conclusions: Endoscopic laser surgery is a safe and effective technique when treating airway disorders in children. It is a good alternative to open surgery in selected patients either used alone or in combination with other endoscopic procedures.