

A Case of Laryngopharyngeal Reflux Disease (LPRD) In Children

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Abstract: Pharyngolaryngeal reflux disease (LPRD) is a type of Gastro-esophageal reflux disease (GERD) that involve upper airway. LPRD affect mainly the larynx by the contact between gastric acid reflux and the mucosa of respiratory tract. LPRD can affect both baby and children. Cough, hoarse and dyspnea represent typical manifestation, but this pathology sometimes present atypical symptoms. In this situation is very important the role of endoscopy of upper airway. We describe a case of a child with atypical manifestation of LPRD and we show the central role of endoscopy in this diagnosis.

Key word: Laryngopharyngeal reflux disease, Extraesophageal reflux disease, Inspiratory stridor, Respiratory noises

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I. Introduction

Pharyngolaryngeal reflux disease (LPRD) is a type of gastro-esophageal reflux disease (GERD) that involve upper airway. This term was adopted for the first time in 2002 by American Academy of Otolaryngology Head and Neck Surgery (1). LPRD affect mainly the larynx by the contact between gastric acid reflux and the mucosa of respiratory tract. The exact prevalence of this pathology in childhood is unknown, but we estimate that about 1 child out of 5 can suffer from GERD (2). LPRD can affect both baby and children with different clinical manifestation. In a 2013 work, Venkatesan et al (2) describe signs, symptoms and complications of this pathology in childhood. Cough, hoarse and dyspnea represent typical manifestation. The management of LPRD regards initially the pediatrician that, based on clinical history and the objective examination, sets up an empirical therapy with IPP (3-4). However, the correct diagnosis of LPRD is not always easy. To show the connection between laryngeal inflammation and reflux is an hard work and the role of ENT could be helpful for the pediatrician. Indeed, the endoscopic rating of larynx and the creation of a score based on observed laryngeal finds (RFS), will clarify many doubts about the diagnosis of LPRD (2). We present the case of a 10 years old child that reached our observation for her dry cough during for about 1 year and with development of noisy breathing since about 3 weeks.

Case report

M.V. 10 years old. She doesn't present significant disease except for common infant rashes and she doesn't present allergies or atopic family history. Since about 1 year she presents dry cough during the day and particularly in supine position. The patient was initially submitted at chest RX and spirometry, that were normal. IgG, IgM and IgE evaluation results normal. She did allergy test for common inhalants, resulted normal. In the last 3 weeks her parents refer the progressive appearance of an atypical cavernous noise during respiration. Day by day we observe a progressive worsening of the symptom. Therefore, pediatrician suggests an ORL evaluation. The patient is submitted at endoscopy of upper airway. We observe regular nasal septum, normal lower turbinates, adenoid's hypertrophy of 1st grade, normal oral mucosa, tonsil's hypertrophy of 1st grade, pharynx regular, normally conformed epiglottis, regular laryngeal ventricles, regular glottis, marked edema of posterior laryngeal region with mucosal flap in respiratory space. By endoscopy we clearly observe that during inspiration mucosal flap's vibration determines the respiratory noise (fig.1). Diagnosis is LPRD and we start treatment with Ranitidine syrup 150 mg 2 times a day. We also recommended her to follow some behavior like lift the top of the bed and reduce assumption of fruit juices, chocolate, tomato and mint charms. Subsequently gastroenterologist suspends Ranitidine treatment and sets up Omeprazole (10 mg in the morning and 20 mg in the evening). We repeat endoscopy after 12 months from diagnosis. We observed a complete resolution of signs and symptoms (fig. 2).

II. Results

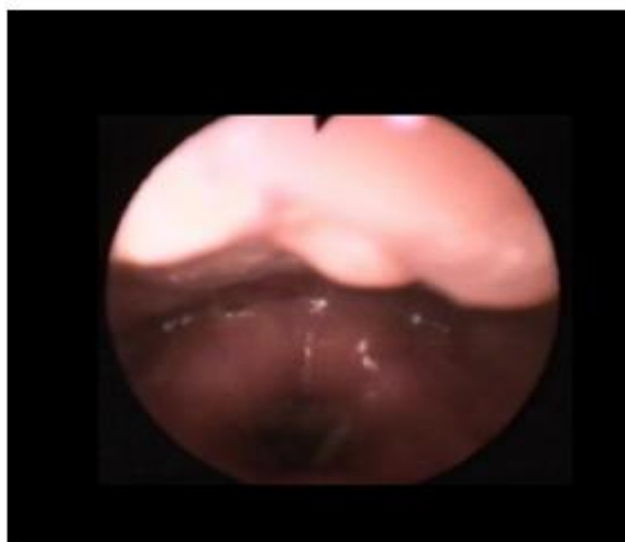


Fig 1. We observe mucosal flap in the posterior region of the larynx that vibrates during inspiration. That vibration cause an atypical noise. This condition is a consequence of LPRD.

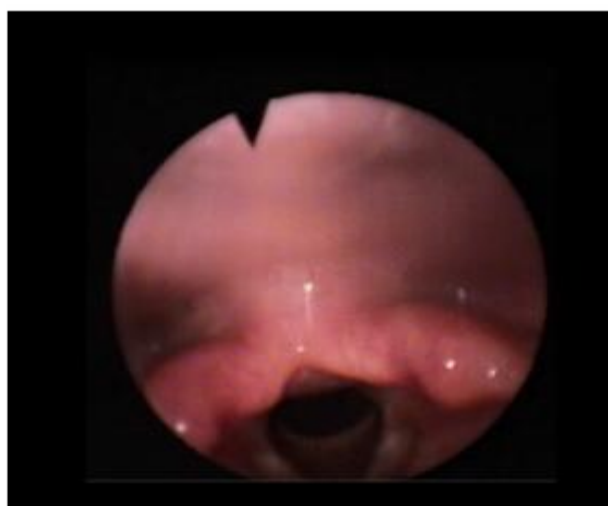


Fig 2. After treatment with ranitidine and omeprazole for a year we can observe complete resolution of signs and symptoms

III. Discussion

LPRD represents a frequent disease but not easy to diagnose. Today don't exist tests that show certainly the relationship between reflux and pharyngeal-laryngeal inflammation. In 2001 Belafsky et al. designed a symptoms scale (Reflux Symptom Index-RSI) to simplify diagnosis in suspected LPRD and to run more easily the follow-up of affected patients (5). The author considers 9 suggestive symptoms for the reflux (raucedini, raclage, excessive mucus, difficult in swallow, postprandial cough, dyspnea, problematic cough, sensation of pharyngeal foreign body, chest pain) and, according to their gravity, gives them an increasing score from 0 up to 5. A total score higher than 13 is considered abnormal and suggestive for LPRD. However, sometimes symptoms are not suggestive. In the presented case, the child shows dry cough without other symptoms. RSI didn't result suggestive for LPRD. We want emphasize in these cases the importance of laryngeal endoscopy. To observe directly morphological features of the larynx, to file images and to compare the situation before and after a therapy, represents a very big benefit in diagnosis and in management of these patients. Belafsky et al. proposes also a score (Reflux Finding Score) related to endoscopic laryngeal finds (6). He considers 8 laryngeal aspects (hyperaemia, widespread laryngeal edema, under glottical edema, cordal edema, ventricular occlusion, commissural rear hypertrophy, granuloma, endolaringeous mucus) and gives them a score from 0 up to 4 according to inflammatory level. The score presents a range between 0 and 26 and a score higher than 7 is considered suggestive for LPRD. In the case that we describe, the child presented only

insistent and annoying cough with RSI lower than 13, not suggestive for LPRD. The appearance of an anomalous cavernous noise in inspiration not easily understandable pushed the pediatrician to ask for ORL consulence. Laryngeal endoscopy showed a marked rear commissural hypertrophy with the presence of mucosal flap moved by the volume of air passing through larynx during inspiration. We considered the endoscopic picture suggestive for LPRD and we formulated a treatment with ranitidine syrup later changed with omeprazole and suggested to modify some aspect of life style. At the endoscopic control made 1 year later, laryngeal picture results normalized and the patient doesn't present cough and noisy breathe. We consider that in the management of LPRD in childhood the role of pediatrician is central. Generally he can set up an empirical treatment with PPI when the symptoms are not clear. However in some difficult case endoscopy of the larynx is very important and solver, furthermore, it deals about an exam minimally invasive and withlow cost.

IV. Conclusions

LPRD represents a condition connected with an extra oesophageal reflux. Its prevalence in paediatric population is not clear. The diagnosis is often connected with the clinical story and the treatment on empirical base. However in some cases endoscopy of upper airway becomes necessary. This procedure is slightly invasive and is low cost exam, very useful for the diagnostic framing of atypical cases.

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