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A Rare Case of Patient with Left Chilaiditi's Syndrome

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Abstract

The following case report aims to highlight the rarity of the case in question, in which there is left Chilaiditi syndrome in a patient with bronchial asthma. The patient is a 79-year-old woman who arrived in January 2023 at my facility for episodes of recurrent dyspnea, chest heaviness, wheezing, eructation, dysphagia, epigastric abdominal pain associated with frequent episodes of bronchitis. He performed simple spirometry which showed mixed mild-moderate ventilatory deficit with reduction of small airway volumes, reduced peak expiratory flow and negative broncho reversibility tests for asthma. At 3 months, the patient returned to my attention with a chest radiograph showing marked elevation of the left hemidiaphragm with deviation of the cardiac shadow to the right. He repeated the spirometry which resulted in a clear improvement compared to the previous control with an important variation of the peak respiratory flow during ICS/LABA, the objective finding previously found disappeared, this indicating the presence of an underlying bronchial asthma. The radiological picture was identified by me as Left Chilaiditi Syndrome, as the patient had gastrointestinal symptoms which accompanied the procession of respiratory symptoms. The diagnostic suspicion must be early in these pathologies and the proton pump inhibitors and new generation alginates with the presence of hyaluronic acid and melatonin must also be included in the treatment of the symptoms, which have an important action on gastroesophageal reflux disease (GERD) secondary to this herniation of the viscera into the thoracic cavity. The rarity is represented by the left localization of the diaphragmatic pathology.

Keywords: ***Chilaiditi syndrome, asthma, obesity, case report, left side.***

Introduction

Chilaiditi syndrome was first described in 1910 by a radiologist of Greek origin. It is a pathology that has an incidence in the world that varies from 0.025 to 0.28% [1], with a prevalence in males (4:1) [2]. In the clinical case reported, we report the symptoms of a patient who came to our attention at the "La Madonnina" Reggio Calabria clinic, with asthmatic respiratory symptoms associated with epigastric abdominal pain, belching, dysphagia. The diagnosis of Chilaiditi syndrome was made radiologically, the particularity of this case is represented by the left localization.

Case Presentation

The clinical case described is a 79-year-old Caucasian woman who came to our attention in January 2023 for reported episodes of dyspnoea, chest heaviness, wheezing, eructation, dysphagia, epigastric abdominal pain, frequent episodes of bronchitis. History: non-smoker, allergic to tramadol and ASA (acetylsalicylic acid), hypothyroidism on levothyroxine therapy, arrhythmic heart disease on NOA (new oral anticoagulant) therapy, folate deficiency, systemic arterial hypertension, hypercholesterolemia, hyperuricemia, obesity. At the first visit we performed the ACT (asthma control test) which was equal to ten, Simple spirometry with broncho-reversibility test which is attached (Table 1). On physical examination, the patient presented with a diffuse obstructive finding with bilateral expiratory wheeze and wheeze. The vital parameters were all normal, except for the SpO2 equal to 90% in ambient air. Therefore, I set up an aerosol therapy for the first 15 days with beclomethasone and ipatropium bromide performed three and twice a day respectively, broad spectrum antibiotic therapy with azithromycin for 6 days, oral corticosteroid for 8 days, gastric protector, then ICS/LABA two times beyond until the next checkup in 3 months. Subsequently, the patient, having returned to clinical and spirometric control, repeated the control spirometry (Table 1) in which, as has been highlighted, there is a clear improvement in the peak expiratory flow and in the volumes of the small airways, which indicate the presence of an asthmatic component. The patient also viewed a chest X-ray, where it was possible to see a marked elevation of the left diaphragm with the interposition of some intestinal loops which are thickened (Figure 1); and which also made me formulate the diagnosis of left Chilaiditi syndrome. We treated the patient with ICS/LABA, proton pump inhibitors, new generation alginate and after 3 months the results of the spirometry and the patient's clinical conditions were improved with an increase in peripheral oxygen saturation SpO2: 97% in room air and clinical improvement of the previously reported symptoms. We await the patient for the new re-evaluation at six months to monitor her over time.

Table 1: Simple Spirometry at the baseline with broncho reversibility test and at three months after treatment with ICS/LABA two inhalations twice day. Noted the Variability of PEF: +12% at three months.

Spirometry parameters	Results baseline	Results after Salbutamol 400mcg	Results three months
FVC%	44%	43% (-1%)	50% (+6%)
FEV1%	45%	44% (-1%)	50% (+5%)
FEV1/FVC%	97%	102% (+5%)	100% (-2%)
$FEF_{25-75\%}$	39%	49% (+27%)	50% (+28%)
PEF%	68%	70% (+2%)	80% (+10%)
FET (sec)	7,33 sec.	7,14 sec.	7,70 sec.
$FEF_{25\%}$	47%	63% (+34%)	81% (+18%)
FEF50%	22%	32% (+47%)	39% (+7%)
$FEF_{75\%}$	63%	77% (+22%)	58% (-19%)

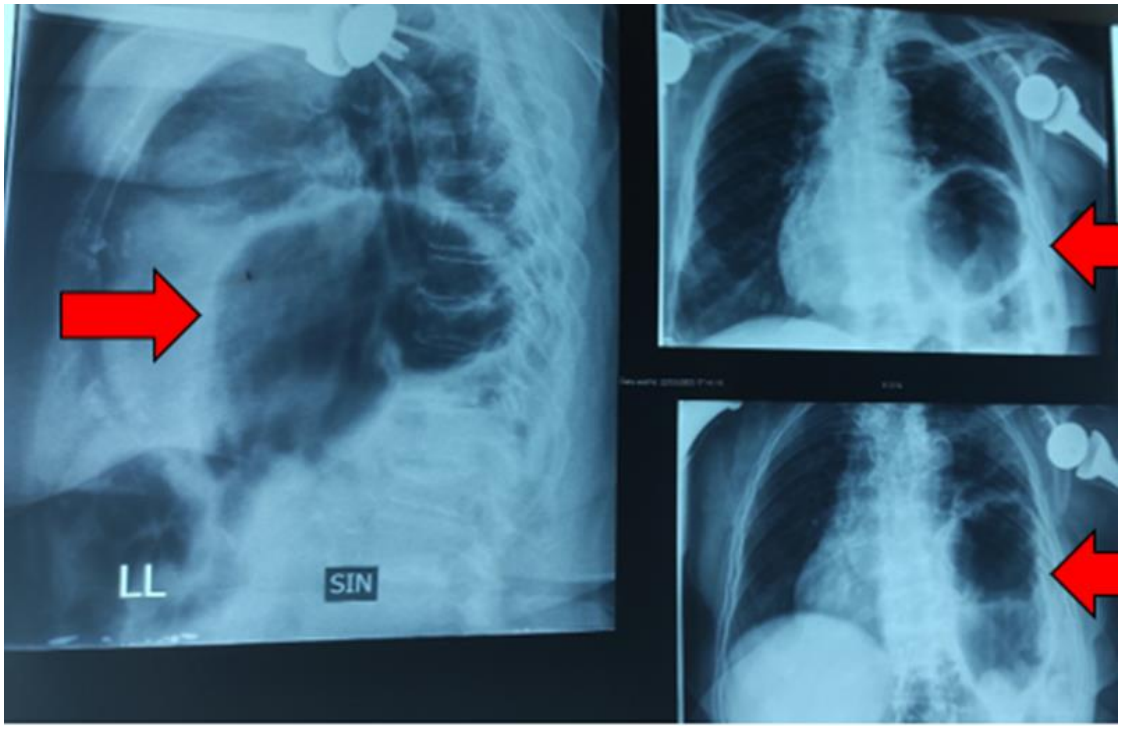

Figure 1: Chest x-ray in postero-anterior and lateral projections shows the interposition of colon on the left side of the chest with the shift of the cardiac shadow to the right and a thickening of the colon in the lower scans, as you can see with red arrows.

Discussion

The reported clinical case is a very rare case in the literature, which in recent years has seen an increase in the incidence of these diagnoses in obese patients. The sign of Chilaiditi is an incidental finding that can be seen on the chest radiograph and is associated with abdominal or thoracic symptoms [3]. Treatment of the pathology is usually non-surgical with bed rest, fluid supplementation, nasogastric decompression, diet rich in fiber [4]. As reported on a review of the literature usually variations of the normal anatomy of the diaphragm, can lead to the pathological interposition of the colon. These anatomical variations may include the absence, laxity or lengthening of the suspensory ligaments of the transverse colon or the falciform ligament such as dolic colon or congenital malpositions [5]. In a study conducted by American surgeons, it is underlined that there is an important distinction between the Chilaiditi sign, which is found in asymptomatic patients, and the Chilaiditi syndrome, which produces symptoms associated with intestinal interposition [6]. It can often be described in adults but sometimes also in children as indicated in a case report of a 4-year-old Nepalese girl [7]. In the most serious cases, associated with anomalies of the autonomic nervous system, intestinal decompression can be performed with gradual resolution of the symptoms [8]. Conservative treatment in pediatric age is always preferable as indicated by a case report in the literature [9]. There is a single rare case in the literature of left Chilaiditi syndrome in a man with suspected intestinal perforation [10]. The reported clinical case is unique in that there are no cases reported in the literature of the association between asthmatic pathology and Chilaiditi syndrome.

Conclusion

The importance of knowing the Chilaiditi syndrome radiologically through images of the interposition of intestinal loops inside the thoracic cavity is fundamental in the diagnosis, furthermore in the reported clinical case the asthmatic symptoms were aggravated and accentuated by this underlying situation. To date, there is little evidence in the literature regarding this topic and there is only one clinical case in the literature of left localization of the disease. Further clinical studies are needed regarding this association between the two entities.

Legend

FEV1%: Percentage of predicted value of FEV1
FVC%: Percentage of predicted value of FVC
FEV1: Maximum Expiratory Volume at first second
FEV1/FVC%: Index of Tiffeneau
FVC: Forced vital capacity.
PEF: Peak of expiratory flow
FEF25-75%: Forced expiratory flow between 25 and 75% of FVC.
FET: Forced expiratory time.

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Conflict of interest

Authors declare no conflict of interest.

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