

## Recurrent Intestinal Obstruction Revealing Hypothyroidism

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### Abstract

**Introduction:** Intestinal obstruction/pseudo-obstruction remains an unusual and often unrecognized clinical presentation of hypothyroidism, particularly in the inaugural forms. This explains significant diagnostic delay and unnecessary surgical interventions often noted in these cases.

We report here an original observation of recurrent intestinal obstruction revealing hypothyroidism.

**Case Report:** 53-years-old patient was explored in emergency and surgery departments for acute abdominal pain with constipation, and vomits. The diagnosis of intestinal occlusion with negative investigations and spontaneous resolution was retained.

He was readmitted twice for the same symptomatology. During his third admission, he was referred for an internist opinion, and the thyroid tests confirmed the diagnosis of a deep hypothyroidism with TSH at 68  $\mu$ IU/ml and fT4 at 2 pmol/l. Under hormone replacement therapy, the evolution was favorable with disappearance of digestive symptomatology and no other occlusive episode has been reported for five years now.

**Conclusion:** As rare as it may be, intestinal obstruction/pseudo-obstruction caused by hypothyroidism, deserves to be known to avoid unnecessary, and sometimes heavy, surgery. Our observation is characterized by its recurrent and revealing character of the disease.

**Keywords:** Intestinal obstruction, pseudo-obstruction, hypothyroidism, acute abdomen.

### INTRODUCTION

Hypothyroidism is a common endocrinopathy, especially in the elderly, but its diagnosis can sometimes be a real challenge for the clinician because of unusual symptoms [1]. Indeed, the clinical spectrum of this pathology can range from totally asymptomatic forms to the most serious forms, including surgical emergencies and acute abdomens [1, 2]. This large clinical polymorphism allows some authors to qualify hypothyroidism as a «great simulator» [2].

The intestinal manifestations of hypothyroidism vary greatly from diffuse hypomotility, ileus, volvolus of the sigmoid, intestinal obstruction/pseudo-obstruction [3-5], to more serious forms of megacolon, mega-small intestine, mega-duodenum [3, 6], and more rarely serious and even fatal complications of intestinal atony or spontaneous colonic perforation [6, 7].

Intestinal obstructions/pseudo-obstructions remain, however, an unusual and often unrecognized clinical presentation of hypothyroidism [2, 5, 8], particularly in the inaugural forms, accounting for significant diagnostic delay and unnecessary surgical interventions [2, 9].

We report here an original observation of recurrent intestinal obstruction revealing hypothyroidism.

### CASE REPORT

Tunisian patient, 53 years old and without significant pathological antecedents, was examined in the emergency department for acute abdominal pain with constipation, and a few episodes of vomiting evolving for two days. The somatic examination noted a distended and sensitive abdomen, with tympanism and absence of bowel sounds. The patient was afebrile and hemodynamically stable.

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Abdomen X ray showed multiple air-fluid levels and dilated loops of bowel (**Figs. 1 and 2**).



**Figure 1.** Abdominal X-ray: multiple air-fluid levels and dilated loops of bowel.

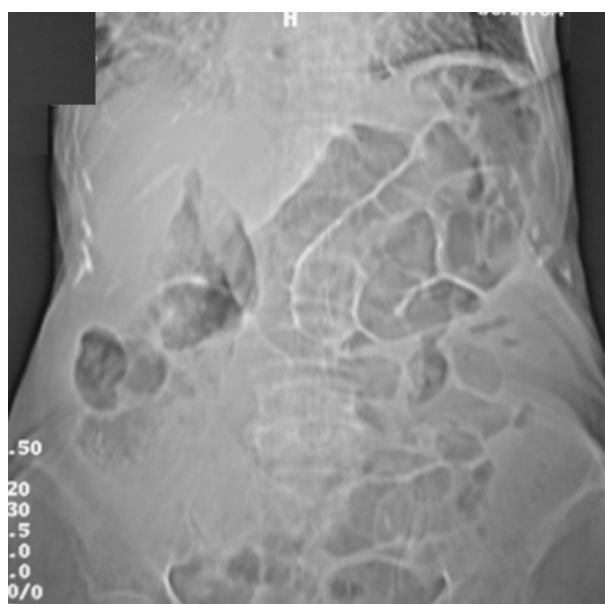


**Figure 2.** Centered abdominal X-ray: dilated right and left colon with multiple air-fluid levels specific of both colic and small bowel obstruction.

The patient was admitted to the surgery department for acute intestinal obstruction.

The basic biological tests were within normal limits: erythrocyte sedimentation rate at 25mm/H1, C-reactive protein at 5 mg/l, white blood cells at 7 700/mm<sup>3</sup>, hemoglobin at 13.3g/dl, platelets at

228 000/mm<sup>3</sup>, creatinine at 55 µmol/l, calcemia at 2.48 mmol/l, sodium at 138 mmol/l, potassium at 4 mmol/l, chlorine at 100 mmol/l, creatinine phosphokinase at 80 IU/l, lactic dehydrogenase at 280 IU/l and amylasemia at 130 IU/l. The electrocardiogram was normal as was the chest X-ray. The sonographic findings included dilated fluid-filled bowel loops. Abdominal CT showed a prominent and diffuse bowel distention filled with fluid and air without evidence of mechanical obstruction anywhere (**Fig. 3**). Under symptomatic treatment (digestive rest, nasogastric tube, repetitive and laxative enemas), the outcome was favorable and the patient was discharged from the hospital.



**Figure 3.** Abdominal CT (topogram): diffuse dilated loops of bowel (colon and small intestine) without obvious obstacle.

He was readmitted twice for the same symptomatology. During his third admission, he was referred for an internist opinion, and the thyroid tests required because of the observation of a dry and rough skin, confirmed the diagnosis of a deep hypothyroidism: TSH at 68 µIU/ml and fT<sub>4</sub> at 2 pmol/l. Cervical ultrasound showed a chronic atrophic thyroiditis. Anti-thyroglobulin and anti-TPO autoantibodies were negative. With progressive hormone replacement therapy until normalization of TSH under 100 µg of thyroxine per day, the evolution was favorable with disappearance of digestive symptomatology and no other occlusive episode has been reported for five years now.

### DISCUSSION

Obstructions/pseudo-obstructions are exceptionally reported during hypothyroidism and all published findings have been reported as sporadic cases [4, 5, 7-15].

Hypothyroidism, for its part, also remains a very rare etiology of intestinal obstruction/pseudo-obstruction; indeed, only one case in Rondeau M series of 12 intestinal occlusions of the elderly seen in internal medicine, was caused by hypothyroidism, corresponding to prevalence of 8.3% [16]. As a result, this endocrinopathy often remains forgotten and neglected in the emergency departments in front of a clinical picture of intestinal obstruction [2,5,8].

The intestinal pseudo-obstruction of hypothyroidism can be acute, subacute or chronic and recurrent [4, 9, 12, 13]. It occurs classically in the wakening of a known hypothyroidism not or insufficiently treated, but can exceptionally be the first manifestation revealing this endocrinopathy [10, 11].

The most classic presentation is the benign and acute pseudo-colonic obstruction defining the Ogilvie's syndrome [3, 12, 15]. More rarely, more serious presentations can be seen: the intestinal pseudo-obstruction of hypothyroidism may be associated concomitantly with other severe manifestations of the endocrinopathy such as Hashimoto's encephalopathy [10] and myxedematous coma [12], or result in septicemia because of bacterial translocation [8] or peritonitis, especially that spontaneous colonic perforation is also recognized to be a possible complication of hypothyroidism [6], or cause an intestinal atony with a fatal outcome [17].

These secondary intestinal obstructions/pseudo-obstructions caused by hypothyroidism can occur at any age: neonatal [14], pediatric [9], adult and geriatric [4, 7, 10, 13] cases have been reported.

The exact mechanism behind these gastrointestinal motility disorders in hypothyroidism is not yet well understood; a synergistic mechanism of thyroid hormone deficiency (direct effect) and catecholamines (indirect effect) on smooth muscle cells of the digestive tract is strongly evoked [3]. There is also the probable causal role of intestinal mucosal infiltration by glycoproteins, causing their denervation [2].

In children, intestinal obstruction secondary to hypothyroidism may reveal an exceptional entity called Van Wyk Grumbach syndrome, where intestinal

obstruction is related to a cystic ovarian mass caused by hypothyroidism [9].

Similarly, in the elderly, this obstruction can also, exceptionally, reveal a tubo-ovarian mass, sometimes of infectious origin [13]. Moreover, and in the elderly with an old hypothyroidism, intestinal obstruction, with sometimes recurrent colonic volvulus, may be related to a particular complication of hypothyroidism, which is "visceral atrophic myopathy" which is characterized by diffuse atrophy of visceral smooth muscles without neurological involvement [4].

The outcome of these intestinal obstruction/pseudo-obstruction caused by hypothyroidism is usually impressive after hormone replacement therapy [8].

### CONCLUSION

As rare as it may be, intestinal obstruction/pseudo-obstruction caused by hypothyroidism, deserves to be known and evoked in front of any acute abdomen that is not proven, both in children and adults. It is a serious and potentially severe complication of hypothyroidism that should not be neglected by clinicians because unnecessary, and sometimes heavy, surgical procedures can be avoided. Our observation is characterized by its recurrent and revealing character of the disease.

**Abbreviations:** Anti-TPO: anti-thyroperoxidase antibodies, fT4: free tetra-iodothyronine, TSH: Thyroid Stimulating Hormone.

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**Citation:** Bouomrani S, et. al. *Recurrent Intestinal Obstruction Revealing Hypothyroidism. Archives of Gastroenterology and Hepatology.* 2018; 1(1):22-25.

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