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Dimitri Kanyanda Nafatalewa
Department of Surgery, Faculty of Medicine, University Clinics of Lubumbashi, University of Lubumbashi, Province of Haut-Katanga, Democratic Republic of Cong

Eric Mbuya Musapudi
Department of Surgery, Faculty of Medicine, University Clinics of Lubumbashi, University of Lubumbashi, Province of Haut-Katanga, Democratic Republic of Cong

Augustin Kibonge Mukakala
[1] Department of Surgery, Faculty of Medicine, University Clinics of Lubumbashi, University of Lubumbashi, Province of Haut-Katanga, Democratic Republic of Congo.
[2] Department of Surgery, University Clinics of Bukavu, Faculty of Medicine, Official University of Bukavu, Bukavu, Democratic Republic of Congo

Prince Muteba Katambwa
Department of Surgery, Faculty of Medicine, University Clinics of Lubumbashi, University of Lubumbashi, Province of Haut-Katanga, Democratic Republic of Cong

Manix Banza Ilunga
Department of Surgery, Faculty of Medicine, University Clinics of Lubumbashi, University of Lubumbashi, Province of Haut-Katanga, Democratic Republic of Cong

Vincent De Paul Kaoma Cabala
Department of Surgery, Faculty of Medicine, University Clinics of Lubumbashi, University of Lubumbashi, Province of Haut-Katanga, Democratic Republic of Cong

Trésor Kibangula Kasanga
Department of Surgery, Faculty of Medicine, University Clinics of Lubumbashi, University of Lubumbashi, Province of Haut-Katanga, Democratic Republic of Cong

Didier Tshibangu Mujinga
Department of Surgery, Faculty of Medicine, University Clinics of Lubumbashi, University of Lubumbashi, Province of Haut-Katanga, Democratic Republic of Cong

Amisi Lubosha Nasser
Department of Surgery, Faculty of Medicine, University Clinics of Lubumbashi, University of Lubumbashi, Province of Haut-Katanga, Democratic Republic of Cong

Daniel Ilunga Ntanga
Department of Surgery, Faculty of Medicine, University Clinics of Lubumbashi, University of Lubumbashi, Province of Haut-Katanga, Democratic Republic of Cong

Corresponding Author:
Dimitri Kanyanda Nafatalewa
Department of Surgery, Faculty of Medicine, University Clinics of Lubumbashi, University of Lubumbashi, Province of Haut-Katanga, Democratic Republic of Cong

Dequervain-Crile thyroiditis: About a case and literature review

Dimitri Kanyanda Nafatalewa, Eric Mbuya Musapudi, Augustin Kibonge Mukakala, Prince Muteba Katambwa, Manix Banza Ilunga, Vincent De Paul Kaoma Cabala, Trésor Kibangula Kasanga, Didier Tshibangu Mujinga, Amisi Lubosha Nasser and Daniel Ilunga Ntanga

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Abstract
We report the case of a 30-year-old patient with goiter who increased in volume more and more in an infectious context with neck pain and signs of compression. This had motivated surgical management. The pathological result of the operating room revealed sub-acute thyroiditis of Quervain-Crile.

Keywords: Dequervain-Crile thyroiditis, hyperthyroidism, anti-inflammatories, medical treatment

Introduction
Subacute Dequervain-Crile thyroiditis is an infrequent pathology with a favorable evolution. The incidence is 4.9/100,000 per year, with a female predominance.
It is an inflammation of the thyroid gland, of which several possible pathogens have been described, including the mumps virus, Epstein-Barr virus, Coxsackie virus, adenovirus and influenza viruses, but also non-viral affections such as typhoid fever or malaria, and seems to be linked to the HLA-B35 determinant [1, 2].
The clinical evolution is Triphasic. There is a phase of hyperthyroidism which lasts 3 to 6 weeks caused by a leak of preformed thyroid hormones following Lysis of the thyroid follicles.
This phase is followed by a phase of hypothyroidism in 30% of patients, caused by the depletion of preformed thyroid hormone and which can last several months. After this second phase there is normalization of the thyroid synthesis.
There are a few cases of definite hypothyroidism in less than 15% according to the Minnesota series [2, 3].
We report the case of sub-acute Dequervain-Crile thyroiditis occurring six months after childbirth in a 33-year-old woman. The rarity of this pathology motivated the present publication. The objective was to describe a case of Dequervain-Crile thyroiditis diagnosed and treated at the university clinics of Lubumbashi in September 2018.

Patient and observation
Mrs. X, 33 years old, parity three, gestation three, zero abortion and zero death, the last child was six months old. She had a history of old ENT infection. She presented with a sub hyoid Antero-Cervical mass dating back approximately two years that had become large and painful two months after conception. The biological exploration objectified a biological inflammatory syndrome (high ESR). The total T4 level was normal at 117.90nmoI/l; that of T3 slightly above normal at 2.63nmol/l (N 0.9-2.33) and that of TSH at 0.66 microU7ml (N 0.30-4.20). Thyroid ultrasound showed a heterogeneous right lobe slightly increased in volume (21 x 18mm) with hypo echoic and echogenic areas. The isthmus was increased in volume (66mm) homogeneous. The left lobe was greatly increased in volume, heterogeneous with hypo echoic areas, echogenic nodules and small foci of calcifications. The larynx and salivary glands were normal. There was no evidence of Adenopathy. The appearance was in favor of a nodular and cystic goiter of the left lobe overlapping the midline with an inflammatory syndrome [Fig 1]. The cervical X-ray performed had revealed anterior tracheal compression with early cervicarthrosis [Fig 2].

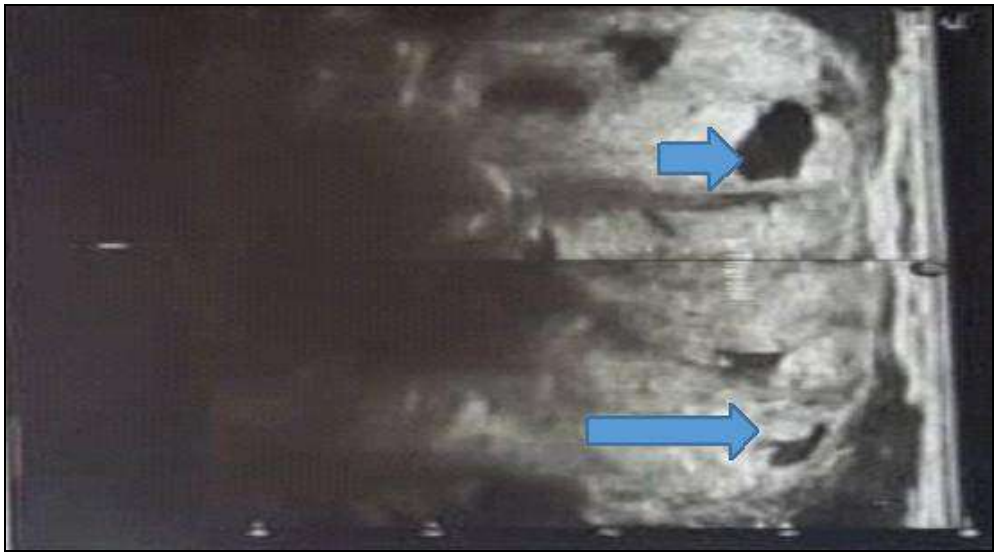
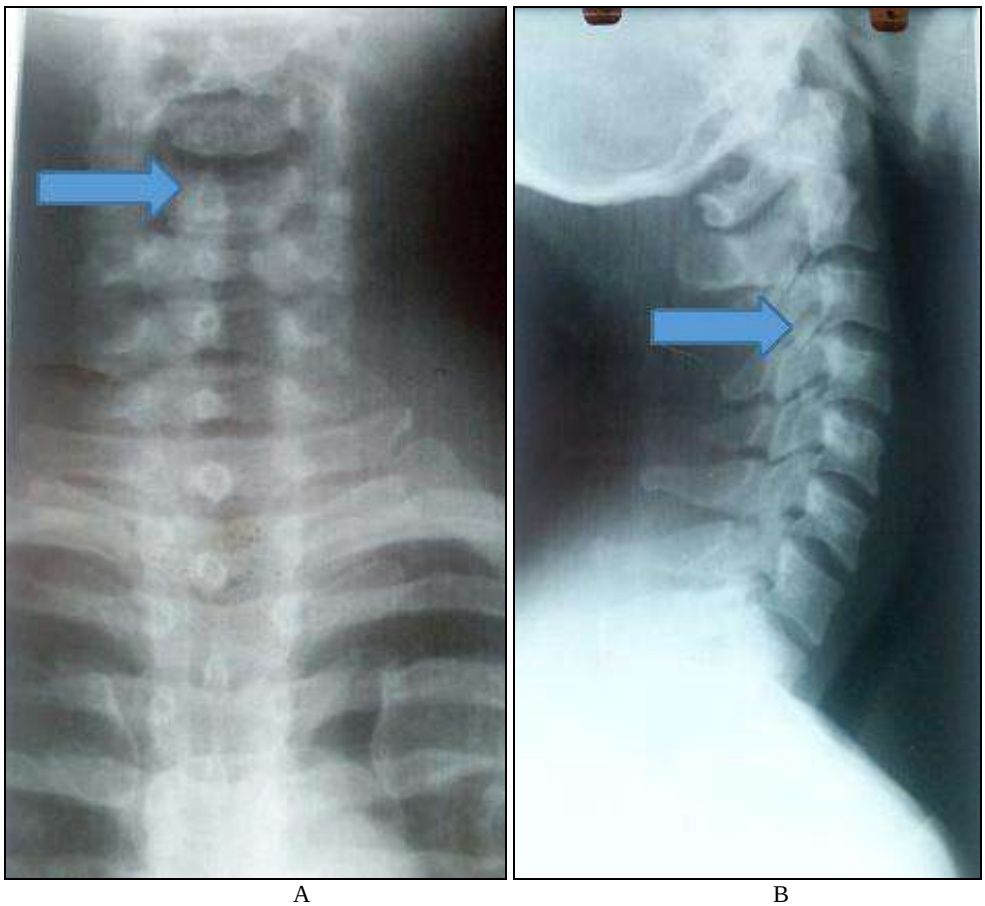


Fig 1: Ultrasound image of a large nodular and cystic goiter of the left lobe overlapping the midline with inflammatory syndrome



A B

Fig 2: A and B: X-ray images show incipient cervicarthrosis (see posterior wall) and slight anterior tracheal compression

Medical treatment consisting of anti-inflammatories, corticosteroids and synthetic antithyroid drugs had been instituted without success. The appearance of signs of compression (dysphagia and dysphonia) prompted surgical treatment. The intraoperative finding revealed that the two lobes of the thyroid gland were hypertrophied and plunged into the Antero-superior mediastinum. We then noted a nodule in each of two lobes, adhering to the deep plane. We had performed nodulectomies and subtotal thyroidectomy. Histological examination showed benign thyroid parenchyma tissue with a thin fibrous capsule and several dilated micro and macro follicles, of variable size, filled with colloid and lined by a flattened hyperplastic epithelium with cuboid cells. In places, hyperplastic nodules as well as firmly attached micro follicles with round nuclei. The Stroma presents with chronic granulomatous inflammation made up of lymphocytes, plasma cells, multinucleated giant cells, epitheloid histiocytes, and non-caseating granulomas as well as fibrosis, congestion, hemorrhage, and pigment-laden macrophages. Without cytological Atypia, neither nuclear, nor dysplasia, nor malignancy. All suggestive of granulomatous thyroiditis (Dequervain-Crile thyroiditis / Subacute thyroiditis). The postoperative follow-up was simple, and the patient was discharged on the fifth postoperative day.

Discussion

Subacute thyroiditis, or Dequervain-Crile thyroiditis, also called pseudo granulomatous thyroiditis, giant cell thyroiditis, pseudo tuberculosis thyroiditis or viral thyroiditis, is uncommon [4]. The average age in the Minnesota series in the USA in 2012 was 27 years [3], 41.1±9.1 in that of Istanbul in Turkey in 2018 and 39 years in the Morocco series in 2017 [2] almost similar at the age of our patient who was 33 years old. Subacute thyroiditis is probably caused by a viral infection of the thyroid gland. The germs in question are: the Coxsackie virus, the Epstein-Barr virus, the adenovirus, the flu virus, the mumps virus; measles virus, HIV. A recent well-documented case occurred during the H1N1 flu. There was also a case secondary to treatment with interferon (IFN) [1, 5, 6].

De Quervain's Subacute granulomatous thyroiditis, the most common cause of thyroid pain, may result from a viral infection including COVID-19. Diagnosed clinically by history, physical examination and laboratory tests, it is usually self-limiting. This classic 3-phase picture begins with thyrotoxicosis that lasts 3-6 weeks, as preformed thyroid hormones are released due to a destruction of thyroid cells. This period is followed by an intermediate hypothyroid phase due to the depletion of thyroid hormone reserves, which can last 6 months. Of affected patients, 85%–95% will regain normal thyroid function within 6 months [5]. Our patient had not been subjected to immunotherapy and no etiological examination had been carried out.

Biologically, during the thyrotoxicosis phase of silent thyroiditis, TSH levels are at low levels and free T4 may be elevated depending on the degree of thyrotoxicosis. During the hypothyroid phase, the TSH level is high and free T4 may be low because approximately 80% of patients have antithyroid peroxidase (anti-TPO) antibodies [7]. Our patient was in her first phase. The American Thyroid Association recommends measuring serum TSH levels every two months postpartum for up to one year postpartum to monitor the development of hypothyroidism [8]. The thyroid ultrasound performed showed homogeneous nodular cystic hypertrophy with hypo echoic and echogenic areas and small foci of calcifications. No Adenopathy was demonstrated. This appearance was suggestive of a nodular, cystic goiter of the left lobe overlapping the midline with an inflammatory syndrome. This corroborates with data from the literature as detailed by Ehorvath, Smajlis *et al.* [9]. Corticosteroid therapy (Prednisone) can be initiated daily at 40 mg, a gradual reduction in para clinical monitoring is observed several weeks later and the symptoms resolve within a few days. Thyroidectomy should be considered for only a small minority of patients who have repeated relapses despite appropriate treatment [3]. The American Thyroid Association recommends synthetic antithyroid therapy in the corticosteroid therapy group [8, 10]. In general, it is not necessary to order imaging tests or thyroid biopsies, but given the presence of substantially elevated levels of inflammatory markers and severe pain in the patient, there is concern that whether it is a suppurative thyroiditis or a thyroid abscess and a CT scan can be requested. Other causes of painful thyroid disorders such as intrathyroid hemorrhage, cysts, nodules or, more rarely, infiltrating cancers have also been ruled out. Ultrasonography is usually preferred for imaging the thyroid because it offers better spatial resolution; in cases of painful Subacute thyroiditis, the gland is hyper echoic and presents with vacuities that ranges from weak to normal on color Doppler ultrasound) [1].

During the acute phase, treatment is based on β-blockers for thyrotoxicosis symptoms (antithyroid agents are ineffective) and non-steroidal anti-inflammatory drugs for pain and inflammation. Corticosteroids are recommended for intractable severe pain and thyrotoxicosis symptoms. Levothyroxine is sometimes required during the hypothyroid phase, but should be discontinued after 3–6 months, unless the hypothyroidism persists, in which case long-term treatment should be continued. Concerning our patient, the operation was performed after failure of medical treatment.

Conclusion

Dequervain-Crile thyroiditis is a rare entity. The diagnosis can be evoked in front of a hypertrophy of the painful thyroid gland in an infectious context in a postpartum patient. The treatment is medical by non-steroidal anti-inflammatory drugs, corticosteroid therapy but also surgery. Surgical therapy should be offered if medical treatment fails.

Conflicts of interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

Author Contributions

All authors have read, contributed, and approved this work.

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