LATERAL AND MEDIAN CYSTS OF THE NECK

GRZEGORZ BUŁA, JANUSZ WALER, ANDRZEJ NIEMIEC, RYSZARD MUCHA, JACEK GAWRYCHOWSKI

Department of General Surgery, Silesian Medical University in Katowice; Department of General Surgery and Endocrinological Surgery, Hospital No 2 in Bytom

Kierownik: prof. dr hab. J. Gawrychowski

The aim of the study was to present clinical picture, indications for surgery, immediate and remote results of surgical treatment for lateral and median cysts of the neck.

Material and methods. A total of 17247 patients were operated between 1 January 1990 and 31 December 2011 for neck tumors. Neck cysts were diagnosed in 34 (0.2%) patients, including lateral in 12 (35.3%) and median in 22 (64.7%). Lateral cyst once descended to the mediastinal. Nodular goitres were diagnosed in 17 (50%) of them – with the lateral cysts 4x and median cysts 13x. Guided fine-needle aspiration biopsy of the cyst-like lesions revealed the presence of protein masses in all patients. The lesions were found to have inflammatory character in 6 patients (17.6%) regarding median cysts (5x) or lateral cyst (1x). Out of them, 3 patients developed purulent inflammatory process. All patients were operated. The operation consisted of radical resection of the cyst only or plus partial resection of both thyroid lobes and total resection of pyramidal lobe if concomitant goitre was found. Two patients required one-stage resection of the enlarged lymph nodes in the neck. Suspected focus of thyroid papillary cancer was found by intra-operative examination in neck median cyst wall in one patient. However, paraffin tests did not confirm the suspicion. Another patient was found by histopathological examination to have active tuberculotic process within both lateral cyst and lymph nodes. The patient received intensive antituberculotic treatment postoperatively.

Conclusions. 1. Median cysts of the neck are more often accompanied by thyroid tumor-like goitres than lateral cysts. 2. Radical resection of the cysts in operative treatment results in good long term patient condition and prevent in recurrence of the illness.

Key words: lateral cysts of the neck, median cysts of the neck, nodular goiters

Quite a number of pathologies, both inflammatory and neoplastic, often occur in the neck. Among proliferative types, the most commonly observed are those related to thyroid and parathyroid glands or lymphatic system (1-7) where the lymph ascends both from the head and from the chest organs. Moreover, a variety of developmental anomalies connected with primary alimentary tube organs i.e. trachea and esophagus are also found in the neck (8, 9, 10).

The purpose of this paper is to present clinical picture, indications for surgery, immediate and remote results of surgical treatment for lateral and median cysts of the neck.

MATERIAL AND METHODS

A total of 17247 patients were operated between 1 January 1990 and 31 December 2011 for neck tumors. Neck cysts were diagnosed in 34 (0.2%) patients, including lateral in 12 (35.3%) and median in 22 (64.7%). At the same time 16384 (95%) patients were operated for goitres, including 790 (4.8%) for malignant thyroid tumors.

Preoperative physical examination, X-ray and ultrasonography of the neck together with thyroid scintigraphy were performed in all patients. These were accompanied by guided fine-needle aspiration biopsy if tumor-like le-
sions were discovered. Moreover, all patients received chest X-ray and some of them computer tomography of the chest and neck. In addition, hormonal activity and immunological condition of thyroid gland were examined if nodular goitres were found prior to operation. All patients were evaluated in laryngological and internal aspects as well.

Histopathological examination of thyroid specimens was each time performed by two independent histopathologists.

Upon discharge, the patients were followed-up by an outpatient clinic.

RESULTS

A group of 34 patients aged 12-72 (mean age 37.2), consisting of 27 (79.4%) women and 7 (20.6%) men, were operated for neck cysts. Nodular goitres were diagnosed prior to operation in 17 (50%) of them.

Physical examination revealed neck tumor-like lesions in all patients. Twenty two (64.7%) lesions were in central portion of the neck, including one in suprahyoidal position. Twelve (35.3%) were located laterally against sternocleidomastoid muscle. Seventeen lesions were very dense, smooth and elastic with regular outline. One lateral lesion extended down to manubrium sterni and upper mediastinum. Physical examination revealed lateral lymphadenopathy in 2 patients. The presence of nodules around the enlarged thyroid gland was found in 12 patients, and subfebrile body temperature (up to 37.5°C) in 6. No patient had any changes in thyroid hormonal activity.

Ultrasonography revealed hypoechogenic lesions of different density within the tumor in all patients. Among patients with concomitant goitres, the cyst-like lesions were only three times located laterally against large vessels thus suggesting the presence of lateral cysts of the neck. In other cases it was hardly possible to establish location of the lesion against thyroid gland. The presence of enlarged deep lymph nodes of the neck was confirmed ultrasonographically in 2 patients only. However, thyroid scintigraphy revealed defects in marker uptake within the tumors in all patients.

Guided fine-needle aspiration biopsy was performed preoperatively in all patients. Biopsy of the cyst-like lesions revealed the presence of protein masses in each case. Lateral cyst of the neck was suggested in 2 patients only.

Chest X-ray showed widening of upper mediastinal shadow, lateral displacement of trachea and narrowing of tracheal lumen in 2 cases.

Preoperative laryngological examination did not reveal vocal cord mobility disorders in any patient.

All patients were operated on schedule. The presence of lateral cysts was detected intraoperatively in 12 patients. Concomitant nodular goitres were observed in 3 of them. Median cysts were detected in 22 patients including 13 with concomitant goitres. The operation consisted of radical resection of the cyst only or plus partial resection of both thyroid lobes and total resection of pyramidal lobe if concomitant goitre was found. Two patients required one-stage resection of the enlarged lymph nodes in the neck. Site of the operation was drained in each case.

The lesions were found to have inflammatory character in 6 patients (17.6%) regarding median cysts (5x) or lateral cyst (1x). Out of them, 3 patients developed purulent inflammatory process. Inoculation showed Streptococcus pyogenes in 2 cases and was sterile in the rest, also for anaerobes. Preliminary broad-spectrum antibiotic therapy was applied perioperatively, and was replaced by a guided type after a time.

Suspected focus of thyroid papillary cancer was found by intra-operative examination in neck median cyst wall in one patient. However, paraffin tests did not confirm the suspicion. Another patient was found by histopathological examination to have active tuberculous process within both lateral cyst and lymph nodes. The patient received intensive antituberculous treatment postoperatively.

All patients were discharged in good condition and have been periodically followed-up with no recurrence of the neck cysts.

DISCUSSION

Our patients confirm the observations of other authors with reference to epidemiology and rarity of lateral or median cysts of the neck (11, 12). Such cysts are usually observed in children, although they can occur in any age group as presented above (8, 9, 10, 13). Inborn
lateral cysts of the neck are caused by developmental disorders in branchial arch or cleft, whereas median cysts are associated with embryologic development of thyroid gland and its descent along thyrolingual duct. Our observations suggest that such cysts are often accompanied by thyroid tumor-like goitre.

Clinical course of a cyst is usually mild with no significant problems (11, 14, 15). Physical examination generally reveals the presence of an elastic painless tumor, gradually increasing in size and located in typical position. Branchiogenic lateral cysts are found laterally against deep vessels of the neck and lateral border of sternocleidomastoid muscle (15, 16). Therefore it is important to differentiate them from enlarged lymph nodes, usually in case of systemic diseases, and from metastases or inflammatory lesions (4, 17, 18). Median cysts are found along midline below lingual bone within thyroid pyramidal lobe (19).

Progress of the disease is not always quite typical as shown by our patients. It may well happen that lateral cysts will take mediastinal location with accompanying compression symptoms.

If inflammatory lesions are present, the clinical course may progress into an abscess (20). In such situation the tumor rapidly increases in size, the process being accompanied by local tenderness and pain typically radiating towards the ear. In addition, reddening of the neck skin, enlargement of local lymph nodes and elevated body temperature are observed. Such dynamic clinical picture suggest an abscess including a thyroid abscess (2). However, our observations did not record any such dynamic progress of the disease.

In light of diagnostic problems, the neck cysts often require to be differentiated from thyroid malignant tumors. As the literature indicates, there may be thyroid cancer focii visible in histopathological structure of neck cysts, in particular median (18, 21).

Imaging examinations, like ultrasonography, X-ray or scintigraphy, do not always enable differentiation between lateral or median cysts and other tumors of the neck (11, 22, 23). In such cases it may be important to perform guided fine-needle aspiration biopsy of the lesion. Apart from diagnostic role, the biopsy will also allow external drainage of the cyst (20, 24). However, this may result in a complication like infection of the cyst contents followed by an abscess. In our experience, repeated punctures of a cyst usually lead to local recurrence sooner or later.

Indications for operation are chiefly based on clinical condition of the patient presenting with evident lateral or median cyst of the neck. Other factors that may qualify for operation are: diagnostic problems, tumor-like lesions suspected of being a tumor, pressure lesions, presence of internal fistulas or external cysts (8, 9, 10, 14, 18, 21). Surgical procedure usually consists of radical resection of the cysts together with existing fistulas. If concomitant lesions are diagnosed within thyroid gland, the surgeon may decide to resect the goitre and thyroid pyramidal lobe by one-stage procedure. If the cyst is accompanied by inflammatory process and an abscess, the surgery may consist of incision, inoculation and drainage protected by antibiotic therapy, the latter of broad-spectrum at first and guided type later. After a time it may be necessary to resect the cyst together with secondary fistulas (9, 10).

CONCLUSIONS

1. Median cysts of the neck are more often accompanied by thyroid tumor-like goitres than lateral cysts.
2. Radical resection of the cysts in operative treatment results in good long term patient condition and prevent in recurrence of the illness.

REFERENCES