Analysis of the Clinical characteristics of Nasal vestibule Masses

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Abstract: Objective: To analyze the clinical characteristics of nasal vestibule masses. Methods: We retrospectively analyzed the clinical data of 89 cases of nasal vestibule masses treated during the period of July 1998-May 2012. Results: The 89 cases of nasal vestibule masses all had benign lesions. Among them, 82 cases had nasal vestibule cysts, 4 cases had papilloma, 1 case had non-specific inflammatory mass, 1 case had neurilemmoma, and 1 case had fibroma. All patients were treated by surgery, without intraoperative and postoperative complications. One case of papilloma had recurrence 1 year after the surgery, and was cured after the second surgery. Conclusion: Nasal vestibule masses are mostly benign lesions, and surgery is the preferred treatment.

KEYWORDS: nasal vestibule; nasal tumors

Nasal vestibule masses are relatively common, and most of them are nasal vestibule cysts. In clinical practice, inconsistencies between the pathology and the symptoms, signs and sinus CT have been observed. To further summarize and categorize the types of nasal vestibule masses, we retrospectively analyzed the cases admitted and treated in our hospital in nearly 14 years.

Materials and Methods

1. General information: We included a total of 89 cases, with 16 male cases and 73 female cases. The male: female ratio was 1:4.56, and the patients aged between 2.5 to 77 years with a mean age of 44.6 years. The course of disease ranged from 1 day to 30 years, with an average of 2.1 years. And 54 cases had the masses on the left side and 35 cases had the masses on the right side.

2. Clinical manifestations: Most of the patients (61 cases) only complained of lumps or local uplift. The common symptoms included: 30 cases of nasal congestion, 21 cases of localized pain, and 10 cases of nasal mucus. There were 6 cases of epistaxis with small bleeding volume, including one case of cysts, 2 cases of papilloma, and 1 case of nasal fibroma combined with recurrent capillary hemangioma. The less common symptoms included: 2 cases of blood in nasal mucus, 1 case of nasal itching that was diagnosed to have a non-specific inflammatory mass, 1 case of heated cheeks that was diagnosed to have nasal vestibule cyst combined with infection, 1 case having the sensation of heaviness in the cheek that was diagnosed to have nasal vestibule cyst, and 1 case having intermittent headaches that was diagnosed to have nasal vestibule cyst.

Most masses were located in the outer wall of the nasal vestibule, and some were located in the alae of the nose or at the junction of the alae of the nose. Patients with larger...
masses may present upper lip or facial local uplifts with the size of 0.5 × 0.4 cm to 3.0 × 3.0 cm. The ipsilateral inferior turbinates may be compressed, accompanied by nasal stenosis and shallow nasolabial fold. Cysts mostly showed clear boundaries and smooth surface. A small portion of cysts were hyperemic and soft, appeared sac-like, and might have the sense of fluctuation, and another small portion of cysts appeared to be ping-pong-ball-shaped, most of them were movable, and those associated with infection showed adhesion with the surrounding tissue. Among the 4 cases of papilloma, 1 case had red, mulberry-like surface with small amounts of blood crust, 2 cases had gray colored and warty surface, and were not prone to bleeding after touch, and 1 case had smooth surface. Fibroma showed gray colored surface and wide base. Neurilemmoma had normal surface skin.

Cyst local puncture mostly produced yellowish liquid, and those associated with infection produced purulent fluid. After puncture, the cyst might be dissipated, yet followed with frequent recurrence. One case that received injection of budesonide after puncture showed local pain and headache. One case of simple cyst had a course of disease of 6 years, and the patient received “nasal vestibule cyst removal surgery” 30 years ago.

3. Sinus CT examination: 59 cases received routine sinus CT examination. Nasal vestibule cysts mostly showed images of smooth soft tissues with clear boundary, uniformly hypodensity or slightly hyperdensity in the nasal vestibule. Patients with larger tumors might present depressed maxillary wall after compression, without bone destruction or bone sclerosis. Neurilemmoma appeared to be images of round shapes with clear boundary, slightly hyperdensity, and slightly uneven density in the nasal vestibule, and the bone of the adjacent maxillary sinus wall was depressed after compression. And 24 cases of cysts, papilloma, fibroma, and non-specific inflammatory mass did not undergo sinus CT.

4. Treatment: 89 patients all underwent surgical treatment. Masses were removed under direct vision of nasal endoscope in 6 cases, and among them, the bases of the masses were cauterized after resection for three cases. Masses in the rest cases were removed through the labiogingival route, including one case with the base of the mass cauterized after resection. No intraoperative complications occurred. During the surgery, it was observed that most cysts had clear boundary, and those combined with infection and a small portion of those without co-infection were closely adhered with the surrounding tissues. The cyst fluid was mostly light yellow, white or milky white, some appeared to be jelly-like, and the liquid from cysts combined with infection was mostly yellow pus. All masses were sent for routine pathological examination after resection.

Results

The 89 cases of nasal vestibule masses all had benign lesions. The specific pathological types are shown in Table 1. Among them, 82 cases had nasal vestibule cyst, accounting for 92.1%, 4 cases had papilloma, accounting for 4.5%, 1 case had non-specific inflammatory mass, 1 case had neurilemmoma, and 1 case had fibroma. After the surgery, patients were cured and discharged without complications. One case of papilloma had recurrence after 1 year, and was cured after a second surgery to remove the mass.

| Table 1: Histological types of the nasal vestibule masses |
|----------------|----------------|----------------|
| Pathological type | cases | Percentage (%) of total cases (89 cases) |
| Nasal vestibule cyst | 82 | 92.1 |
| Papilloma | 4 | 4.5 |
| Non-specific inflammatory mass | 1 | 1.1 |
| Neurilemmoma | 1 | 1.1 |
| Fibroma | 1 | 1.1 |

Discussion

The nasal vestibule area is small, but masses occurring in this area can have diverse natures. The most common mass is nasal vestibule cyst, followed by papilloma, whereas neurilemmoma and fibroma are rare (1).

Nasal vestibule cysts are clinically more common in female, mainly occur unilaterally, and can occur at any age with slow growth and no symptoms at early stages. As cysts increase in size, the main symptom is nasal obstruction, which may be accompanied by localized pain, and the pain increased if the cysts are associated with infection. The content inside cysts is mostly pale yellow liquid. Papilloma mainly presents persistent unilateral progressive nasal obstruction, and may be associated with blood in nasal mucus. In the severe cases, patients may present purulent nasal discharge, headache, and hyposmia. The masses are mostly unilateral, have smooth or granular surface, are gray and lobulated, mulberry-like or wart-like, and have neutral quality. Some only show nasal vestibule skin surface roughness, whereas the malignant ones can invade surrounding tissues. Neurilemmoma
grows slowly, with longer disease course, is symptomatic in early stages, and can present the symptoms of local deformity and mild compression at late stages. And severe or malignant neurilemmoma may invade surrounding tissues. Patients with fibroma often present the symptom of nasal congestion and may have nasal discharge. A few patients can show nasal bleeding or blood in nasal mucus. The masses often appear like polypus, are red or gray in color, are round, have wide base or are pedunculated, have smooth surface, are soft but resilient, and are not prone to bleeding upon touch. Patients with nonspecific inflammatory mass often have a local acute inflammatory history, and the masses are mostly painless or mildly painful irregular lumps, often have a history of growth and decline, are adhered to the surrounding tissue, have neural quality and clean boundaries \[2\], and may have the formation of scar-like tissue.

Under CT examination of the nasal vestibule cysts, the lumps are mostly round or oval-shaped, with clear boundary, smooth, uniformly hypodensity, and usually without significant enhancement. In addition, the surrounding bone may show thinning due to compression, and might even be absorbed or damaged. Atypical nasal vestibule cysts might be mixed-dense or hyperdense, and may be associated with infection or bleeding \[3\]. CT examination of malignant papilloma mainly shows that the masses invade and damage the surrounding tissue and bone, as well as sinuses or intracranial invasion. CT examination of neurilemmoma \[4\] shows that the masses mostly present images of homogeneous soft tissue, and necrotic cysts may show mixed density, may have calcification, show intensification after enhancement, and may have bone thinning, distortion, or even absorption and damage due to compression, without hyperostosis or sclerosis. MRI examination indicates that the masses have clear boundary, and have moderate or hyperintense soft tissue signal, which can show edge-based enhancement. Malignant neurilemmoma can be lumps with irregular shape and less clear boundaries, and is often not associated with cervical lymph node metastasis. However, these findings are not absolute, and malignant neurilemmoma can also show cystic degeneration and necrosis. Therefore, whether the neurilemmoma is benign or malignant has to be diagnosed by pathological examination.

Nasal vestibule masses are mainly treated by surgically resection, and reoccurrence is rare after complete resection. Among them, the classical treatment methods for nasal vestibule cyst and neurilemmoma are surgeries via the labiogingival route, and recently endoscopic nasal vestibule cyst fenestration has been adopted for nasal vestibule cysts \[5\]. Although neurilemmoma is not sensitive to radiotherapy, it is still recommended that for malignant neurilemmoma, extensive radical resection of the tumor should be supplemented with radiotherapy or chemotherapy \[6\]. Papilloma is also not sensitive to radiotherapy, and is often resected via nasal endoscopic surgery, which is accurate and thorough, whereas radiation therapy may be considered upon repeated recurrence after surgery or malignant transformation.

References