The Journal of Laryngology & Otology

cambridge.org/jlo

Incidence and clinical predictors of cystic squamous cell carcinoma metastases in lateral cervical cysts

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Main Article

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Cite this article: Stefanicka P, Gnojcakova N, Kurinec F, Profant M. Incidence and clinical predictors of cystic squamous cell carcinoma metastases in lateral cervical cysts. *J Laryngol Otol* 2019;**133**:430–435. https://doi.org/10.1017/S0022215119000823

Accepted: 2 March 2019
First published online: 22 April 2019

Key words:
Branchioma; Lymphatic Metastasis; Carcinoma, Squamous Cell; Oropharyngeal Neoplasm; Human Papillomavirus

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Abstract

Objective. This study aimed to determine the incidence of metastatic squamous cell carcinoma in patients with an isolated cervical cystic mass, and to describe the clinical features that might predict the origin of cystic tumours.
Method. Adult patients with isolated lateral cervical cystic masses who were scheduled for surgery from 1st January 2010 to 31st August 2016 in two tertiary care referral centres in Slovakia were analysed retrospectively.
Results. The incidence of cystic metastases in the whole cohort and in patients aged over 40 years were 9.9 per cent and 18.5 per cent, respectively. The incidence in patients aged over 40 years (18.5 per cent) was statistically significant ($p = 0.003$).
Conclusion. The incidence of cystic squamous cell carcinoma metastases in lateral cervical cysts in patients aged over 40 years is high enough to call for excisional biopsy with frozen section, panendoscopy with direct biopsies, tonsillectomy and even neck dissection in cases of histologically confirmed carcinoma.

Introduction

The distinction between benign lateral cervical cysts (branchial cleft cysts) and cystic squamous cell carcinoma (SCC) metastasis is nearly impossible to make based on clinical or even radiological findings. Patients with cystic masses are usually without any other symptoms or clinically apparent signs of a primary tumour despite precise physical examination.[1–3]

Imaging techniques such as ultrasonography, computed tomography (CT), magnetic resonance imaging (MRI) or positron emission tomography (PET) can depict the size and morphology of cervical cystic masses, but they are usually inconclusive, especially in the absence of a clinically and radiologically detectable primary tumour.[3–5] Repeated local infection of a cystic mass may change the radiographical appearance from benign to malignant and vice versa. There are patients with metastatic nodes with benign-appearing cystic adenopathy on contrast-enhanced CT imaging; conversely, there are patients with lateral cervical cysts with aggressive features mimicking cancer.[5]

Fine needle aspiration cytology (FNAC) is one of the initial diagnostic procedures in the investigation of patients with neck tumours. However, FNAC is not as useful in diagnosing cystic masses as it is for solid tumours. The false-negative rate of FNAC in diagnosis of SCC in cystic metastases ranges from 50 to 63 per cent.[2,6] Cytologists are often incapable of determining a precise conclusion because the aspirate of cystic masses is hypocellular and contains large quantities of inflammatory cells and cellular debris. There is often a commonly associated inflammatory reaction present, suggesting an inflamed or infected benign cyst.[2,3]

Correlations of FNAC and frozen section biopsy with formal histology in patients with a clinical diagnosis of a branchial cyst show that FNAC is much less reliable than frozen section biopsy in the diagnosis of branchial cleft cyst, with sensitivities of 75 per cent and 100 per cent, respectively. Therefore, the authors recommend intra-operative frozen section biopsy of surgically excised branchial cysts in adult patients, regardless of clinical suspicion of malignancy.[7]

FNAC ancillary techniques, such as human papillomavirus (HPV) analysis, improve the accuracy, although sophisticated methods are not customary at all institutions; in many cases, adequate material, which is mandatory for this purpose, is not available.[8,9] Moreover, the cytopathological presence of HPV-positivity supports the diagnosis of carcinoma with a high degree of specificity, but negative results do not exclude carcinoma.[10]

A final histological diagnosis of carcinoma after surgical excision of a cystic mass may lead to a delay in detection of an occult primary tumour and in the appropriate treatment. Previous neck surgery potentially increases complications because of violated neck tissue, and more aggressive treatment must be planned in these cases. All of these factors increase patient morbidity and could potentially compromise the prognosis.[2,3,7]

The mean age at diagnosis of a lateral cervical cyst ranges from 20 to 40 years, so the most common cause of cystic neck tumours in younger patients is a lateral cervical cyst.[5,7,11–13] Patients aged 40 years or older show higher risk of malignant disease.[1–3,11,12,14] Regauer *et al.*[15] reported that the incidence of exclusively cystic metastasis from Waldeyer's ring is 37 per cent, but solitary cystic metastases identified histologically occur in a total of 17 per cent of cases, with only 9 per cent that are clinically detectable (with a luminal diameter less than 5 mm). The incidence of cystic SCC in lateral cervical cystic masses varies from 10 to 21 per cent,[2,12,14,16] but in patients aged over 40 years, the incidence fluctuates around 23.5 per cent, with one study reporting 80 per cent.[2,12]

In our series study of patients with isolated cervical cystic masses, we sought to determine the incidence of metastatic SCC, and to describe clinical features that might predict the origin of cystic tumours, determine the reliability of such a prediction and contribute to a facilitation of decision-making for these patients.

Material and methods

Adult patients with isolated lateral cervical cystic masses who were scheduled for surgery from 1st January 2010 to 31st August 2016 in two tertiary care referral centres in the Department of Otorhinolaryngology – Head and Neck Surgery, were analysed retrospectively.

Cystic neck masses were defined according to the imaging methods. Inclusive imaging criteria were a round or ovoid shape, a thin capsule and homogeneous fluid content. Patients who had masses with solid walls, asymmetric thickness of the walls or an irregular area (which are imaging characteristics of central nodal necrosis) were not included. Exclusion criteria were a history of malignancy, a history of head and neck irradiation and histological diagnosis of non-squamous cell malignancy.

The age, gender, neck side and location, size, and inflammatory signs of cervical cystic masses were evaluated. Location was assessed according to levels of the neck (level I to VI). Larger tumours were assigned as occupying two adjacent levels. The size of each mass was measured as the maximal and minimal axial diameter on the imaging methods (ultrasonography, CT or MRI). Local inflammatory changes, pain, growth or pressure of the cervical masses, and antibiotic use were considered to be indicators of inflammation. The variables of benign cysts and cystic nodal SCC metastases were correlated to each other. Statistical analysis was performed using Fisher's exact test and Student's *t*-test where appropriate.

Results

One hundred and eleven adult patients with isolated lateral cervical cystic masses were included consecutively. After the surgical removal of cystic tumours, the diagnoses of lateral cervical cysts were confirmed histologically in 100 patients (90.1 per cent). Cystic SCC was histologically verified in 11 patients (9.9 per cent).

The mean age of all patients was 40.2 ± 14.8 years (range, 18–77 years). The mean age of patients with cystic nodal metastasis was 52.7 ± 10.3 years (range, 35–70 years), which was significantly higher ($p = 0.003$) than the mean age of patients with benign lateral cervical cyst (38.8 ± 14.6 years; range, 18–77 years).

The incidence of cystic metastases according to age in patients under 30 years, 30–39 years, 40–49 years, 50–59 years and more than 60 years was 0 per cent, 3.7 per cent, 13 per cent, 22.2 per cent and 23.1 per cent, respectively. The incidence of cystic lymph node metastases rose significantly with increasing age ($p = 0.013$). The incidence of cystic lymph node metastases in patients aged 40 years or older was 18.5 per cent (10 of 54), which was statistically significant with a relative risk of 10.6 ($p = 0.003$; relative risk 10.6; 95 per cent confidence interval = 1.4–79.7).

There were 54 females (48.6 per cent) and 57 males (51.4 per cent) in our series study. Cystic metastases occurred in 5.6 per cent of females (3 of 54) and 14 per cent of males (8 of 57) ($p = 0.204$). The incidence of cystic nodal metastases in males aged 40 years or older was 24.1 per cent (7 of 29) as opposed to females aged 40 years or older, which was 12 per cent (3 of 25), but it did not approach statistically significant difference ($p = 0.167$).

Lateral cervical cystic masses were observed in 54 patients (48.6 per cent) on the right side of the neck and in 57 patients (51.4 per cent) on the left side of the neck. The occurrence of cystic metastases on the right or left side of the neck was similar with 6 of 54 (11.1 per cent) and 5 of 57, (8.8 per cent), respectively ($p = 0.757$). Lateral cervical cysts were consequently a little more frequent on the left side (52 patients) than on the right side of the neck (48 patients).

Cervical cystic masses were found in levels II and III in 89 patients (80.2 per cent). In all patients with cystic metastases, the metastases were located in levels II and III of the neck. Benign cysts were located in levels II and III of the neck in 88 per cent of patients (88 of 100) and were found in other locations of the neck in 12 per cent of patients (12 of 100).

The mean maximal axial diameter of the cystic masses was 4.4 ± 2.3 cm (range, 1.5–15 cm), and the mean minimal axial diameter of the cystic masses was 3.0 ± 1.7 cm (range, 1–10 cm). The mean maximal axial diameter of the benign cysts was 4.5 ± 2.4 cm (range, 1.5–15 cm), and the mean maximal axial diameter of the cystic metastases was 4.0 ± 1.5 (range, 2–8 cm). The mean minimal axial diameter of the benign cyst was 3.0 ± 1.8 cm (range, 1–10 cm), and the mean minimal axial diameter of cystic metastases was 2.9 ± 1.2 cm (range, 1.5–6 cm). Maximal and minimal diameter differences between benign cysts and cystic metastases were not statistically significant ($p = 0.520$, $p = 0.918$).

The occurrence of inflammatory signs, such as pain or local inflammatory changes, growth or pressure, or antibiotic use, was not statistically different between benign cysts and cystic metastases ($p = 0.454$, $p = 0.341$, $p = 1.000$).

FNAC was performed before surgery in 20 patients. In all these patients the cytological result was benign, and in 14 patients the cytological finding was consistent with a lateral cervical cyst diagnosis. Benign cysts were histologically confirmed in 18 patients. Histologically verified SCC was found in two patients, so there was a false-negative cytological result in two patients.

Panendoscopy with direct biopsies and tonsillectomy revealed an occult primary tumour in 9 of 11 patients. All identified primary tumours were in the oropharynx: six were in the palatine tonsils (one patient had a primary tumour in the contralateral palatine tonsil) and three were in the base of the tongue. All primary tumours were small and clinically not apparent. All 11 patients were identified as p16-positive by immunohistochemistry on samples from the primary tumour or from the metastasis. Primary tumours were not

https://doi.org/10.1017/S0022215119000823 Published online by Cambridge University Press

found in two patients, despite panendoscopy, tonsillectomy and close follow up. Histologically confirmed SCCs were moderately differentiated in six patients and poorly differentiated in five patients. The treatment and outcomes of malignant cases are summarised in the Table 1.

Discussion

There is an increasing incidence of HPV-positive oropharyngeal SCC, which represents a unique demographic, molecular and clinical entity with typically younger age, no or limited history of tobacco or alcohol use, and a more favourable prognosis.[17–19] These patients can present with cystic neck masses without a clinically apparent primary tumour, which could be confused with benign lateral cervical cysts.

Many authors emphasise a strong association between cystic cervical node metastases and HPV-related oropharyngeal SCC.[20–24] Yasui *et al.*[24] have shown that HPV infection is consistent between the primary tumour and its corresponding node metastasis and that HPV-positive node metastasis is specific to oropharyngeal SCC, especially for a palatine tonsil or a tongue base primary tumour.

The incidence of cystic lymph node metastases arising from SCC of Waldeyer's ring has been reported to be from 35 to 64 per cent of those with nodal metastasis.[15,21,25] Cyst formation within metastases from Waldeyer's ring was found histologically in 50 per cent of all metastatically affected lymph nodes in 61 per cent of patients. However, clinically detectable cystic metastases (with a luminal diameter more than 5 mm) were identified in 26 per cent of all metastatically affected lymph nodes in one third of patients (34.6 per cent).[15]

The mechanism of cystic formation in the majority of cystic metastases is pseudocystic change and cystic degeneration. This results from spontaneous degradation of keratin and cellular debris within the carcinomatous lymph node deposit. However, some cystic metastases are true cysts. The origin of a true cyst is presumed to arise from submucosal minor salivary gland acini and ducts or from transitional squamous epithelium in the tonsillar crypts. Moreover, Regauer *et al.*[26] found that cytokeratin CK7-positive carcinomas produce CK7-positive cystic nodal metastases, whereas no solid CK7-positive nodal metastases have been identified. Therefore, a subset of carcinomas occurring in the Waldeyer's ring area appear to arise from the large excretory ducts of submucosal minor salivary glands with only limited surface involvement, express CK7 and produce CK7-positive cystic metastases.[15,25,26]

The primary SCC arising in the Waldeyer's ring often demonstrates cystic spaces, especially deep inside crypts, and the cystic metastases simulate the growth behaviour and growth pattern of the parent cells. Therefore, cyst formation has been proposed as an intrinsic property of the tumour.[15]

In a series study of 121 patients with isolated lateral cervical cysts, Gourin and Johnson[2] found that the incidence of unsuspected metastases was 9.9 per cent (12 of 121 patients). However, a significantly greater incidence of malignancy (23.5 per cent) was found in patients over 40 years of age. In a similar sample size in our study, we determined a 9.9 per cent total incidence of metastatic SCC in adults. Moreover, the incidence in patients older than 40 years of age was 18.5 per cent (10 of 54 patients), which approaches statistical significance ($p = 0.003$). The mean age of patients with cystic nodal metastases (52.7 years) was significantly higher ($p = 0.003$) than the mean age of patients with benign lateral cervical cysts (38.8 years). We confirmed that the incidence of cystic lymph node metastases significantly rises with increasing age ($p = 0.013$), so age would seem to be an important factor in the incidence of cystic metastases. In recent studies the average age of patients with cystic nodal metastasis ranges from 53 to 58 years, which corresponds with the younger population of HPV-positive oropharyngeal SCC patients.[2,5,20,25]

The incidence of cystic metastases in our series was higher in males than females (14 per cent and 5.6 per cent, respectively), but was not statistically significant ($p = 0.204$). Of note is the incidence of cystic nodal metastases in males over 40 years, which was 24.1 per cent, in contrast to females over 40 years, which was 12 per cent. This difference did not approach statistical significance ($p = 0.167$), probably because of the small sample size.

The average size of the largest cystic lymph node metastasis in the literature varies from 1.8 to 3.9 cm.[5,21,25] In our study, the mean maximal axial diameter of cystic metastases was 4.0 cm and the mean minimal axial diameter of cystic metastases was 2.9 cm. We did not discover statistically significant differences in the measurements of either diameter ($p = 0.520$, $p = 0.918$). We presume that mass size does not correlate with the biological nature of the lesion. On the other hand, in a study where the branchial cleft cysts and malignant cystic adenopathy were radiographically compared, benign cystic masses were found to be larger on the long axis, short axis and in height. The average measurement for the short axis and long axis for a branchial cleft cyst was 2.2 cm and 2.8 cm, respectively. The average measurement for the short axis and long axis for a malignant cyst was 1.4 cm and 1.8 cm, respectively. In contrast to our study, where we only analysed patients with visible neck masses, branchial cleft cyst and head and neck cancer patients who underwent contrast-enhanced CT of the neck were evaluated in the previously mentioned study. Many of these head and neck cancer patients probably did not present with visible neck masses, so CT-identified cystic lesions were presumably smaller, which could explain the size differences.[5]

In a majority of cases, both lateral cervical cysts and cystic metastases were located in level II and then level III. We found cervical cystic masses (benign and malignant) in levels II and III in 80 per cent of the cases. The lateral cervical cysts in our series were located in level II and III in 88 per cent of cases. Other authors found 95.2 per cent of the lateral cervical cysts in levels II and III.[5] In our study, all cystic metastases were identified in levels II and III (100 per cent). Other authors report that malignant cystic lymph nodes were localised mostly in level IIA (52.6 per cent) and in levels II and III in 63 per cent.[5]

A cystic mobile mass with a history of previous inflammation would suggest a benign lateral cervical cyst rather than a metastasis. The collapse of the cyst after aspiration was also classically described as a lateral cervical cyst characteristic. However, Mallet *et al.* emphasise that none of these signs are sufficient to eliminate cervical metastasis.[27]

In our study, we did not find statistically significant differences between benign cysts and cystic metastases in the occurrence of inflammatory signs such as pain or local inflammatory changes, growth or pressure, or antibiotic use ($p = 0.454$, $p = 0.341$, $p = 1.000$). Similarly, CT imaging did not show a significant difference between benign cystic masses and cystic node metastases when used to look for the presence of streaking as an inflammation feature in adjacent fat surrounding a cystic lesion.[5]

https://doi.org/10.1017/S0022215119000823 Published online by Cambridge University Press

Table 1. Clinical features and treatment of patients with cystic SCC metastases

Patient	Gender	Age (years)	Maximal and minimal axial diameter (cm)	Histology	Primary tumour (T class)	Treatment of primary tumour	Treatment of neck	Adjuvant chemotherapy	Interval between cyst excision and surgical treatment (months)	Follow up (month)	Status
1	F	58	3 × 2	Poorly differentiated SCC	Base of tongue, T_1	EBRT	Excisional biopsy, EBRT	Yes	–	14	DLP
2	M	61	4 × 3	Moderately differentiated SCC	Base of tongue, T_1	EBRT	Excisional biopsy, EBRT	Yes	–	9	NED
3	F	50	4 × 3	Moderately differentiated SCC	Base of tongue, T_2	EBRT	ND (II–IV), EBRT	Yes	11	44	NED
4	M	70	4 × 3	Moderately differentiated SCC	Palatine tonsil, T_1	Tonsillectomy, EBRT	Excisional biopsy, EBRT	No	–	20	NED
5	M	42	4 × 2	Poorly differentiated SCC	Palatine tonsil, T_1	Tonsillectomy, EBRT	ND (I–V), EBRT	Yes	42	19	NED
6	F	53	3 × 2.5	Moderately differentiated SCC	Palatine tonsil, T_1	Tonsillectomy, EBRT	ND (II–III), EBRT	Yes	0	35	NED
7	M	45	8 × 6	Poorly differentiated SCC	Palatine tonsil, T_1	Tonsillectomy	ND (II–V, SCM, IJV)	No	4	27	NED
8	M	35	3.5 × 3	Poorly differentiated SCC	Palatine tonsil, T_1 (contralateral)	Tonsillectomy, EBRT	Excisional biopsy, EBRT	Yes	–	52	NED
9	M	52	4 × 3	Moderately differentiated SCC	Palatine tonsil, T_2	Tonsillectomy, EBRT	ND (II–V), EBRT	Yes	0	8	NED
10	M	65	2 × 1.5	Moderately differentiated SCC	CUP	EBRT	ND (II–IV), EBRT	No	1	45	NED
11	M	49	4.5 × 3	Poorly differentiated SCC	CUP	–	ND (II–IV), EBRT	No	2	64	NED

SCC = squamous cell carcinoma; F = female; EBRT = external beam radiotherapy; DLP = died of local progression; M = male; NED = no evidence of disease; ND = neck dissection; SCM = sternocleidomastoid muscle; IJV = internal jugular vein; CUP = cancer of unknown primary

Cystic metastasis should be distinguished from necrosis in an otherwise solid node. The imaging criteria of cystic nodal metastases were defined by Goldenberg *et al.*[20] Cystic nodes were described as round or ovoid masses with a thin (less than 2 mm) enhancing capsule, homogeneous fluid content, and no internal complex, irregular, or solid area. Nodes with thicker solid walls and irregular, complex central low attenuation are classified as necrotic. Of 20 patients who met these criteria for cystic metastases, 10 had a tongue base primary tumour, 7 had a palatine tonsil primary tumour and 3 had a histologically unknown primary tumour. In situ hybridisation confirmed the presence of HPV DNA in 87 per cent of patients.

Yasui *et al.*[24] found that radiographically identifiable cystic node metastases are specific to oropharyngeal SCC and cancer of unknown primary and are more likely to be HPV-positive when compared with solid or necrotic node metastasis. None of 146 non-oropharyngeal SCCs showed radiographically detected cystic node metastases. On contrast-enhanced CT imaging, 6 per cent of node-positive oropharyngeal SCC and 11 per cent of node-positive cancer of unknown primary showed cystic node metastasis. Yasui *et al.*[24] stated that this prevalence of radiographically identifiable cystic node metastases in oropharyngeal SCC and cancer of unknown primary is relatively low, when compared with histopathologically identified cystic node metastases. Therefore, the capacity of contrast-enhanced CT imaging to visualise a cystic lesion is limited, particularly when the lesion is small.[24]

Ferris *et al.*[4] sought to determine whether radiographic imaging using combination PET-CT can distinguish benign from malignant cystic masses. They reviewed the PET-CT imaging of cystic neck masses in 5 patients over 40 years of age and concluded that PET-CT is not a reliable modality for identifying malignancy in adults with suspicious cystic neck masses.[4] On the other hand, in a series study of 58 patients with single cystic neck lesions, Abadi *et al.*[28] showed that fluoro-deoxy-glucose PET-CT could reliably rule out malignancy, albeit with a high frequency of false-positive scans, requiring further diagnostic analysis.

Using cytology to distinguish benign cervical cysts from metastatic adenopathy continues to be challenging. A multivariate analysis of 19 cytomorphological features for cytological separation of a branchial cleft cyst from metastatic cystic SCC shows that the distinction is cytomorphologically difficult, and diagnostic accuracy still remains imperfect.[6] Image cytometry DNA analysis on cytological specimens can increase diagnostic sensitivity, but only 53 per cent of cases with cystic metastasis showed aneuploidity, indicating malignancy, whereas DNA analysis showed diploidity in all benign cysts.[9]

Polymerase chain reaction analysis of the fine needle aspiration fluid enables non-surgical detection of HPV DNA, which may facilitate the differential diagnosis of cystic node metastasis and lateral cervical cyst.[24] False-negative FNAC still seems to be high, so surgical excision with thorough histological examination can prove the diagnosis. Despite ultrasonography guidance to assess solid components or the cyst wall (regularly performed in our study), our cytological results from cystic neck masses were repeatedly non-diagnostic. Consequently, only a small number of our patients underwent FNAC, and open excisional biopsy to confirm the diagnosis was recommended to these patients. However, we identified two patients (2 of 20) with false-negative cytological results.

Panendoscopy under general anaesthesia, with direct biopsies, primarily of the base of the tongue, and tonsillectomy are an essential part of the diagnosis of cystic malignancy. In our study, we found an occult primary tumour in 9 of 11 patients (6 in the palatine tonsils and 3 in the base of the tongue) in this way. All the primary tumours were small and clinically occult. Two patients remained cancer of unknown primary.

In a study by Zengel *et al.*,[21] the average size of the primary tumour was 1.1 cm in the palatine tonsils and 0.8 cm in the base of the tongue. In 65 per cent of the cases, the size of the primary tumour was 1.0 cm or less. Because of the size and deep submucosal location with contact with basal parts of the tonsillar crypts, pre-operative clinical or radiological detection of these carcinomas is very difficult or impossible. Their study strongly supports a causal relationship between HPV-associated oropharyngeal SCC and cancer of unknown primary.[21] We agree with this relationship, because all the patients in our study had a primary cancer in the oropharynx or had cancer of unknown primary. In addition, all patients with cystic nodal metastases were found to be p16-positive by immunohistochemistry analysis in samples from the primary tumour or from the metastasis.

Thompson and Heffner[25] show that primary tumours arising from tonsillar tissue present with slower growth than is usually expected for SCC, with some tumours remaining undiscovered for many years. They explain this indolent or suppressed growth of the primary tumour by the nature of the tonsillar crypt lymphoepithelium from which these tumours arise. Primary tumours were found within a wide period of time ranging from the day of initial surgery up to 11 years (average of 12.4 months). Tumour infiltrating lymphocytes and inflammatory response are associated with host response resulting in local tumour growth control and even regression of the tumour.[15,25] Meticulous histological analysis of the surgical specimen is necessary in order not to miss small carcinoma. Immunohistological staining can help in detection, especially of small carcinomas with lymphoepithelial differentiation, which resemble physiological cryptal epithelium.[21]

- There is an increasing incidence of HPV-positive oropharyngeal squamous cell carcinoma
- These patients present with cystic neck masses without a clinically apparent primary tumour, which could be confused with a benign lateral cervical cyst
- The incidence of cystic squamous cell carcinoma metastases in lateral cervical cysts in patients older than 40 years with typical location in level II is high enough to call for biopsy or surgical procedures
- Excisional biopsy with frozen section procedure, panendoscopy with direct biopsies, tonsillectomy and even neck dissection in cases of histologically confirmed carcinoma may be required
- The size and occurrence of inflammatory signs should not be considered as clinical predictive features, whether the cystic neck lesion is benign or malignant

The management of lateral cystic neck masses in patients aged over 40 years is not yet well defined. Patients over 40 years with isolated lateral cervical cystic masses should be presumed to have cystic SCC metastasis until proven otherwise, and the general recommendation is to perform surgical interventions in one stage. If the FNAC reveals SCC, it is possible to plan elective treatment, panendoscopy, direct biopsies of Waldeyer's ring, tonsillectomy and neck dissection in one stage. If FNAC is non-diagnostic, excisional biopsy of the cystic mass with frozen section biopsy is indicated. If frozen

https://doi.org/10.1017/S0022215119000823 Published online by Cambridge University Press

section biopsy is positive for SCC, then panendoscopy, direct biopsies of Waldeyer's ring, tonsillectomy and neck dissection should be performed in one stage.[2,3,16,29,30]

Conclusion

The overall incidence of cystic metastases in the whole cohort and in patients older than 40 years was 9.9 per cent and 18.5 per cent, respectively. The incidence of cystic SCC metastases in lateral cervical cysts in patients older than 40 years (particularly male patients) with a typical location in level II is enough to perform an excisional biopsy with frozen section, panendoscopy with direct biopsies, tonsillectomy and even neck dissection in cases of histologically confirmed carcinoma. The size and occurrence of inflammatory signs should not be considered as clinical predictive features, whether the cystic neck lesion is benign or malignant.

Competing interests. None declared

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https://doi.org/10.1017/S0022215119000823 Published online by Cambridge University Press