



Case report

Extensive excisional surgery; the last hope for a patient with human papillomavirus-associated severe head and neck squamous cell carcinoma: A case report

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ABSTRACT

Introduction and importance: Cutaneous squamous cell carcinoma (CSCC) is one of the most common malignant tumors of skin cancer. Most of these cancers occur on the head and neck. CSCC makes up the seventh most common type of cancer worldwide. The incidence of human papillomavirus (HPV)-associated head and neck squamous cell carcinoma became more prevalent, and HPV infection is mainly linked to head and neck squamous cell carcinoma (HNSCC).

Case presentation: A 57-year-old non-smoking man was admitted to Omid Hospital in Urmia, West Azerbaijan, Iran; there were extensive bleeding masses on his head and neck due to squamous cell carcinoma (SCC), and he has been diagnosed with HPV infection so accidentally. The operation room had prepared for excisional treatment and the masses had been removed as much as possible. Patient was referred to the wound care team to receive advanced treatment interventions.

Clinical discussion: Incidence of HPV-associated HNSCC has been more noticeable recently, and HPV infection alone can be a distinct risk factor for metastatic HNSCC. Most patients with HPV positive have peripheral lymph node involvement. Radiation therapy and surgery can offer equally good long-term results in small initial head and neck tumors. Traditionally, advanced head and neck tumors managed surgically more advantageous.

Conclusion: This case illustrates that history of HPV positive can be associated with a more severe and resistant type of HNSCC with poor treatment outcomes. Patients with HPV should be monitored regularly for HNSCC, and treatment should be started as soon as possible for a better result.

1. Introduction

One of the most common malignant skin cancers is cutaneous squamous cell carcinoma (CSCC) or keratinocyte carcinoma [1]. Unfortunately, CSCC isn't enclosed within the U.S. national tumor registries, making it difficult to know the exact incidence and mortality rates in the USA. European records display that the age-standardized prevalence of CSCC ranges from 9 to 96 per 100,000 male population and 5 to 68 per 100,000 female population. In Australia, the incidence of CSCC was 499 per 100,000 in males and 291 per 100,000 in females [2]. Approximately 80% of these CSCCs occur on the head and neck [3].

Head and neck squamous cell carcinomas (HNSCC) arise from mucosal epithelium in the oral cavity, pharynx, and larynx. This malignancy is the seventh most common type of cancer worldwide, affecting more than 5.5 million people, causing over 380,000 deaths every year [4]. The human papillomavirus (HPV) is a third risk factor for head and neck carcinogenesis. There are patients with HNSCC without any history of tobacco and alcohol consumption, and these nonsmokers and non-drinkers have no distinct clinical appearance [5]. The treatment of HNSCC for every individual patient varies by anatomical subsite, stage, illness characteristics, practical issues, and patient desires, including resection, radiation, and systemic therapy [6]. This case report was

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reported according to the SCARE 2020 Guidelines to ensure the quality of reporting [7].

2. Case report

In October 2021, a 57-year-old man with no smoking and drinking history was referred to Omid Hospital in Urmia city, West Azerbaijan, Iran. He complained of bleeding and purulent discharge from painless masses on his head and neck. He declared that he had noticed small sores on his head and neck five years ago and overlooked them until they became more outstanding and prominent; thereby he went to the specialist and was diagnosed with SCC. Radiotherapy for five sessions and chemotherapy by carboplatin, 5-FU, and Cetuximab were started for the patient, and the surgeon removed the masses after completion of the treatment period. The small masses appeared in two years again, and once again, the patient ignored them as the masses were painless. The patient had weak financial status, so he did not attempt to seek treatment until the masses had spread significantly and become infectious with obvious bleeding. Selective treatment was the excision of the masses as much as possible by a general surgeon in the current situation. Before surgery, the patient's biochemical blood sample was examined; the results are shown on Tables 1 and 2. There was no abnormal approach in chest-x-ray and echocardiography, so the patient was transferred to the operation room and prepared for surgery (Fig. 1). In the operation room, they noticed extensive dispersion of genital warts, which was evidence of HPV infection (Fig. 2). The patient underwent extensive excision of his head and neck masses for 4 h (Fig. 3). Pathology examination from masses has obtained, and based on results, cervical lymph nodes had been involved (Table 3). This patient is still in the hospital and was referred to the wound care team for receiving advanced treatment interventions.

3. Discussion

One of the significant medical concerns is SCC of the scalp which represents up to 2% of all skin tumors, with an average age to the diagnosis of 64.8 years. SCC constituted 16.6% of tumors of the scalp, making SCC the second most prevalent after basal cell carcinoma (BCC) [8]. HNSCC is the sixth most common cancer worldwide, with 890,000 new patients and 450,000 mortalities in 2018. The prevalence of HNSCC continues to increase and is predicted to rise by 30% (that is, 1.08 million new patients annually) by 2030 [9,10]. The high incidence of HNSCC in areas such as Southeast Asia and Australia is correlated with consumption of carcinogen-containing products; whereas increasing rates of oropharyngeal infection with HPV have contributed to the high prevalence of HNSCC in the USA and Western Europe; and in general, men are at twofold to fourfold higher risk than women for developing HNSCC [11]. Mafi et al. (2012) showed that the incidence of HNSCC was higher among young Iranian adults, which was due to exposure to tobacco smoking in the forms of bubble pipes and cigarettes [12]. Our case had no history of smoking and drinking.

Risk factors for this malignancy include tobacco, alcohol consumption, environmental pollutants, viral infections such as HPV and Epstein-Barr virus infections. Various risk factors display geographical or cultural, and/or habitual prevalence. The most widespread risk factors

Table 1
Patient's biochemical laboratory results.

Test	Result	Unit
BUN	16.1	mg/dl
Creatinine	0.92	mg/dl
Sodium	134	mEq/l
S.G.O.T (AST)	9	U/L
S.G.P.T (ALT)	18	U/L
Blood sugar	146	U/L
Alkaline Phosphatase	326	mg/dl

Table 2
Patient's Complete Blood Count (CBC) differential laboratory results.

Test	Result	Unit	Test	Result	Unit
WBC	20.96	10e3/ μ L	%NEUT	88.8	%
RBC	3.42	10e3/ μ L	%LYMPH	6.5	%
HGB	9.3	g/dl	%MONO	3.1	%
HCT	29.4	%	%EOS	0.8	%
MCV	86.0	fL	%BASO	0.3	%
MCH	27.3	pg	%LUS	0.5	%
MCHC	31.8	g/dl	#NEUT	18.60	10e3/ μ L
CHCM	31.1	g/dl	#LYMPH	1.37	10e3/ μ L
CH	26.7	pg	#MONO	0.65	10e3/ μ L
RDW	13.9	%	#EOS	0.17	10e3/ μ L
HDW	3.04	g/dl	#BASO	0.7	10e3/ μ L
PLT	671	10e3/ μ L	#LUS	0.10	10e3/ μ L
MPV	7.4	fL			

geographically are the consumption of tobacco and alcohol. Otherwise, heavy users of both substances have a >35-fold greater risk of developing HNSCC [13]. The incidence of HPV-associated HNSCC became more prevalent. Diagnosis of the HPV status of malignancy is significantly important, as HPV+ versus HPV- tumors represent two specific biological and clinical entities with different strategies for treatments [14]. HPV infection was identified as being a vital determinant and independent of distinct risk factors for HNSCC. For nasopharyngeal carcinoma infection the Epstein-Barr virus is a known risk factor, whereas HPV is mainly linked to HNSCC [15]. In a study, the prevalence of HPV genotypes in 10,266 Iranian male and female population was examined by getting samples from the penile and anal sites of male participants and the vagina and cervix of female participants for a five-year period, which the results illustrated that 37% of females and 12% of males had been infected by HPV, indicating the significant prevalence of HPV in Iran [16]. After surgery, we assessed our patient for multiple sexual partners or unpreserved intercourses, which determined that he previously had dangerous and unprotected sexual relationships. The clinical presentation varies with the original site, for example, hoarseness, difficulty in swallowing, or pain in the ear. At initial presentation, more than 40% of patients have regional nodal involvement and disease classified as stage IVA or B, and 10% present with remote metastases considered as stage IVC, and Diagnosis is made via tissue sample biopsy [17]. Being HPV positive is an important factor in the peripheral lymph node involvement, the lymphatic invasion, and histologic grade of patients with HNSCC [18]. At the early stage, HNSCC have a propensity to metastasize to regional lymph nodes. Actually, it has been revealed that almost 30% of patients with HNSCC, suffering from lymph nodes metastasis [19]. Our case was HPV positive and he had a lymph node involvement.

Management of HNSCC must be considered with both the primary site and potential cervical lymph node metastases. Radiation therapy and surgery offer equally good long-term results in small initial head and neck tumors. The function is generally better after radiation therapy than surgery, but the treatment time is shorter. Traditionally, advanced head and neck tumors are managed surgically is more advantageous; resecting the tumor with postoperative radiotherapy is helpful in poor prognostic situations [20]. Chemotherapy and radiotherapy have done for our patient initially but after recurrence the patient did not pursue the treatment process, and the patient's condition become more severe and crucial, thereby there are limited choices for curing him.

4. Conclusion

History of HPV positive can be associated with a more severe and resistant type of HNSCC and treatment for limited or small HNSCC by radiotherapy, chemotherapy then surgery is more feasible; on the contrary this is less conceivable for advanced type. Patients with HPV should be monitored regularly for HNSCC, and if it is detected, treatment should be started as soon as possible for a better outcome.



Fig. 1. Preparing the patient for excisional surgery in operation room.



Fig. 2. Involvement of genital area by obvious and extensive warts due to HPV infection.

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Ethical approval

All ethical principles were considered in conducting this case report. All patient information kept confidential.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Research registration

Not applicable.

Guarantor

Navid Faraji.

Provenance and peer review

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CRediT authorship contribution statement

NP, RG, HS, BM, MHB and NF contributed in data collection, manuscript drafting and reviewing, and approval of final manuscript. NF and NP have contributed in case management, data collection, manuscript drafting and reviewing, and approval of final manuscript. NF performed the study supervision.



Fig. 3. Patient's wounds condition after surgery.

Table 3

The patient pathology report.

History	Scalp ulcer
Gross	Received specimens consists 2 piece of gray colored tissue measuring (3 × 3) × (1.5) cm, totally. One ellipse of skin tissue measuring 5 cm in diameter with a cavity containing necrotic material.
Diagnosis	Summary of specimen: 7/2 Scalp, Ulcer, Excision: _ Squamous cell carcinoma _ N2 metastasis to cervical nodes

Declaration of competing interest

None.

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