

(including pleomorphic adenoma and carcinoma)

DEFINITION

1. Tumours of the salivary glands may be benign or malignant (cancer). 90% of tumours arise in the parotid glands, almost 10% in the submandibular glands and very few in the sublingual glands. The classification of salivary gland tumours is difficult and several schemes have been proposed. The current WHO scheme is based on histopathology and clinical prognosis.
2. 80% of salivary gland tumours are benign. Of the benign tumours, 80% are pleomorphic adenomas. Of the malignant tumours, carcinomas account for 20% of total salivary gland tumours and of these, the adenoid cystic carcinoma is the most common.
3. **Pleomorphic adenoma** is the commonest salivary neoplasm and is usually found in the superficial lobe of the parotid gland. Within the mouth it is most commonly found at the junction of the soft and hard palates. Although these tumours are benign they may recur after treatment. Carcinoma may arise in a pleomorphic adenoma. This occurs in 5% of cases and is particularly common where the tumour is longstanding or recurrent.
4. Cancer is a term which embraces a large number of different diseases, the common feature of which is a malignant tumour. This is a growth (neoplasm) which is not circumscribed but which infiltrates the surrounding tissues and metastasises (spreads to other sites in the body, thereby producing secondary deposits). Any tissue in the body may be affected.
5. Cancers are classified according to the tissue of origin. **Carcinoma** arises from epithelial tissue and **sarcoma** from connective tissue. The suffix-**blastoma** implies a tumour of embryonic origin.
6. **Adenoid cystic carcinoma** is the commonest malignant salivary gland tumour. Nerve infiltration, late metastases and recurrence are features. The metastases are blood borne and occur in the lungs, bones, liver and brain. Lymphatic spread is less common.

CLINICAL MANIFESTATIONS

7. Tumours of the salivary glands are uncommon. The clinical course of both benign and malignant tumours is similar. They present as painless, slow growing swellings. At first they are not fixed to surrounding tissue. They may grow to an enormous size and there may be periods of rapid growth. This latter may indicate malignant transformation. There may be altered saliva secretion. Diagnosis by biopsy is mandatory.
8. Pleomorphic adenoma is found equally in both sexes and occurs most commonly in the 5th and 6th decades. Adenoid cystic carcinoma usually presents in the elderly as a slow growing swelling.

AETIOLOGY

9. Cancer is not one disease but a group of widely different diseases. While some aetiological factors may be common to a number of different types of cancer, each type should be recognised to be an individual disease with its own specific aetiology.
10. The common feature of all cancers is the loss of control over normal cell division and differentiation. Cell division proceeds by a complex sequence of events. For this to be maintained in a normal way it must be strictly controlled. It has been found that certain regions of the chromosomes are vital to this control. These regions are called oncogenes. While the oncogenes perform normally, cell division and differentiation remain under control.
11. The process whereby oncogenes lose control of cell division and differentiation is known as activation. When this occurs cell division and differentiation become chaotic and neoplasia (carcinogenesis) ensues. The factors which activate oncogenes are numerous and varied, some being endogenous, others environmental. There is evidence that in most types of cancer a number of different factors play a part at different stages of the neoplastic process.
12. Some types of cancer are strongly genetically determined with a family history, for example retinoblastoma. In other types of cancer an external agent is the dominant factor, for example aniline dyes, which will cause carcinoma of the bladder in 100% of cases following sufficient exposure.
13. Some individuals are **genetically determined** to be more likely to develop cancer and there is a strong history of a certain type of cancer in their family of origin. Some cancers are more common in one sex than the other.
14. During life many **constitutional factors** are present which may activate oncogenes. These include humoral factors, immunological factors and the normal ageing process during which spontaneous changes affect the genes (somatic mutations).
15. For the most part, cancer is commoner at the extremes of life. This may be because the immune system is relatively less efficient in the young and the elderly. In addition, with increasing age, the summation of naturally occurring somatic mutations and any exposure to carcinogens may become sufficient to activate oncogenes.
16. **Environment factors** play a part in the aetiology of some types of cancer. The following groups of factors have been identified:
 - 16.1 **Chemical**, for example aniline dyes and carcinoma of the bladder.
 - 16.2 **Physical** agents, for example asbestos and mesothelioma.
 - 16.3 **Ionising radiation** which when a certain dose is exceeded will cause cancer in some, but not all, tissues.
 - 16.4 **Ultraviolet radiation** which may cause cancer of the skin. Its tissue penetration is limited and so it does not cause cancer in the deeper tissues.

- 16.5 Some specific **viruses** have been identified which play a part in the causation of particular types of cancer, for example hepatitis B and primary carcinoma of the liver.
- 16.6 It has been suggested that a wide variety of other environmental factors may cause certain types of cancer. Many of these suggestions have been based on animal studies, in vitro experiments or on epidemiological studies with small samples of inadequate controls. These contentions are still at the stage of speculation.
17. Because of the relative rarity of salivary gland tumours, work on their aetiology has been limited. They are thought to be largely constitutional in origin. They are not related to tobacco or alcohol use. There is some evidence that there is increased incidence following exposure to ionising radiation.
18. Tumours of the salivary glands are not caused by climatic extremes, trauma, physical or mental stress or lowered resistance arising from hardship or other diseases. Their progress is independent of external factors other than medical treatment.

CONCLUSION

19. Tumours of the salivary glands may be benign or malignant. Their aetiology is mainly constitutional although environmental factors may play a part. Their course is unaffected by environmental factors other than those involved in their treatment.

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