

Review article

Nasal mass & nasal diseases Physiology

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Abstract:

Nasal mass is a very common clinical entity known from ancient times. Many explanations have been put forth as regards their etiology & mechanism of formation & various treatments were advocated in the past. The earliest mention about this condition dates back to ancient Hindu Medicine, notably "Sanskrit Atharvaveda" (700 B.C.). Nasal polypoidal masses were called as "Nasarsh". Hippocrates credited as being "Father of Medicine" gave a graphic description of nasal polypoidal masses as early as 460-370 B.C. & can thus be called as "Father of Rhinology". Forestus (1522-1597 A.D.) described a case of a woman whose nasal polypi, according to him, were due to forcing of mucous membrane into the nose which he attributed to her carrying heavy weights on her head.

Introduction:

Nasal mass is a very common clinical entity known from ancient times. Many explanations have been put forth as regards their etiology & mechanism of formation & various treatments were advocated in the past. The earliest mention about this condition dates back to ancient Hindu Medicine, notably "Sanskrit Atharvaveda" (700 B.C.). Nasal polypoidal masses were called as "Nasarsh". Hippocrates credited as being "Father of Medicine" gave a graphic description of nasal polypoidal masses as early as 460-370 B.C. & can thus be called as "Father of Rhinology". Forestus (1522-1597 A.D.) described a case of a woman whose nasal polypi, according to him, were due to forcing of mucous membrane into the nose which he attributed to her carrying heavy weights on her head.

Historical aspects:

In 1571, Aranzi (1530-1589 AD) gave an account of his method of dealing with nasal polypi & described a forcep with long jaws which he designed for removing them. Because of the difficulties of blood obstructing the view he experienced when using a knife, he was inspired to construct his long forceps. Perhaps even more interesting was his manner of illuminating the anterior nares. He placed the patient in a darkened room & made a hole through a wooden shutter to admit a ray of light. This was then directed into the nasal cavity by elevating the tip of nose. On cloudy days he used artificial light magnified by a water bottle.

As early as 1000 B.C. a type of curette was used in India for eradicating nasal polyp which was frequent & troublesome disease in many parts of Hindustan. Hippocrates (460-370 B.C.) Gave technique of removal of polypi which was included in the

textbooks till as late as that of Valtolin's in 1888. He used to employ a piece of wire string which was passed through the nose into nasopharynx. Sponge was attached to the postnasal end & sponge was then pulled through the nose removing all before it! Snares similar to those used today were developed in the middle ages.

Tumors arising within or involving nasal cavity & related paranasal sinuses were recognized in time of Hippocrates who distinguished between hard and soft tumors. For hard mass he used snare. For still harder growths he employed cauterization with a hot iron probe passed through hollow tube, serving as a speculum. Following removal he advised local application of caustic powder & insertion of lead plates smeared with oil & honey. This, no doubt, was to control haemorrhage & prevent adhesion.

Cato the censor (234-149 B.C.) from Rome advocated the use of cabbage powder snuff to cause regression. He also advised to continue using it till roots of polyp were eradicated. Quarks used to use white wine for the same.

Paulus of Angina (625-690 A.D.) who practiced at Alexandria, first described ethmoidal cells as the origin of the nasal polyp & described a method of removing them. Fabricius ab Aquapendente (1537-1619 AD) who wrote about the same time as Forestus was a proponent of cautery & decided its application as follows. "An iron cannula is to be inserted in the nostrils, through this a glowing hot instrument is to be introduced, which however should not reach beyond the cannula. It should be so done that the hot iron heats the tube & through this the nasal tissues. It is not indicated that the nose should suffer pain from this heat".

Nasal diseases physiology:

All polypoidal conditions were initially grouped together until histological classification helped to differentiate them from the neoplastic condition. This classification was first stated by Berold in 1954. Billroth described their histological characteristics in the middle of the nineteenth century. Prior to 18th century polypi were described foreign bodies & granulation in the nose.' In 1721 Juncker put forward Lunar theory - influence of moon in the progress of nasal polypi & he preferred waning moon days for their removal. This concept of environmental factors affecting nasal polyps was again stressed by Christopher Heath who wrote in 1882. "The influence of the weather upon polypus nasi should be noted; dampness causing them to increase largely in size".

In 1887 for the first time it was said that thickening of mucosa & oedema was the cause. Histological nature of nasal polypi was put forward by Hopman, Chiari, Wright & Eggaton. There was excessive haemorrhage after removal of some nasal masses & with histological advances it was found that most of these masses were angiofibroma. The treatment of angiofibroma has been subject to change over years. Harrison in 1976 described in details about angiofibroma. As late as 1960s, the practice of grasping the angiofibroma with giant bone holding forceps & wrenching them out was still in evidence in some centers.

Martin, Ehrlich, Abels in 1948 used testosterone while Patterson in 1973 used oestrogens & combination of two was advocated by Schiffin 1959. Lasjaunias (1980), Lang, Mckeller & lang (1983) advocated preoperative embolization to reduce bleeding for angiofibroma. Rhinoscleroma was first described by Friedmann in 1966. Antibiotic

treatment was first used by Salt in 1975. While the detail classification of fungal & yeast infection was first described by Emmons in 1977. Local injections of steroids were advocated for the rhinosporidiosis in the past. Recently diaminodiphenyl sulphone(Dapsone) has shown to be effective in controlling rhinosporidiosis. Much study has been done on non healing granulomatous diseases of the nose which present with nasal obstruction & epistaxis. Fortunately over the last decade both clinical & pathological studies have classified the situation & most clinicians recognize two main groups, Wegener's granulomatosis & lethal midline granuloma (nasal lymphoma). Wegener's description of rhinogenic granulomatosis in 1939 was a classic paper in which he described both the clinical & pathological features of the condition. % Non-healing midline granuloma originally described by McBride in 1897. Recently in 1969 Kassel, Echevarria & Guzzo has been stated that the condition is probably a malignant lymphoma. Harrison in 1974 used radiotherapy for the treatment of lymphoma with success & Michaels & Gregory in 1977. More

recently in 1982, Ishii stated the use of *i* immunofluorescent technique for the same. Wide variety of benign & malignant tumours of different histological types is found in the nasal cavity & paranasal sinuses. On histopathological basis tumours are classified as papilloma, haemangioma, fibroma, neurofibroma, osteoma & other osseous tumours.

Nasal tumors:

Tumours arising within or involving nasal cavity & related paranasal sinuses were recognized in the time of Hippocrates who distinguished between hard & soft tumors. Ringertz in 1938, Osborn in 1970 & Hyams in 1971 described the transitional cell tumour or inverted papilloma & its potential for malignancy. Ringertz (1938) divided the nasal papillomas into squamous & those exhibiting cylindrical or transitional epithelium. The earliest description of transitional type of papilloma was by Billroth (1855) in his monograph on mucous polypi. The term true papilloma of nasal cavity was given by Kramer & Som (1935). The term transitional cell carcinoma was first introduced by Quick & Cutler.

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