



Cancrum oris and noma: some etymological and historical remarks

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Received 5 June 2002; accepted 2 June 2003

KEYWORDS

Noma; Cancrum oris; Necrotising ulcerative stomatitis; Stomatitis gangrenosus; History; Etymology

Summary Necrotising ulcerative stomatitis is used in the International Statistical Classification of the WHO for orofacial gangrene in children, that is known in medical literature as cancrum oris or noma. The many historical synonyms for this disease together with other historical data indicate that orofacial gangrene in children was a common affection in Europe in previous centuries. The etymological and historical backgrounds of the names 'noma' and 'cancrum oris' indicate that 'cancrum oris' is based on the incorrect use of the Latin term 'cancer oris' and maybe on tradition, for which reasons the use of 'noma' as medical term for necrotising ulcerative stomatitis should be preferred.

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Necrotising ulcerative stomatitis is an orofacial gangrene that mainly occurs in young children. Untreated, it is generally lethal within a few weeks. Patients who survive noma frequently suffer severe sequelae such as facial disfigurement, trismus, oral incontinence and speech problems (Fig. 1). It is caused by a combination of malnutrition, debilitation by diseases like measles, and intraoral infections.¹ The global incidence of noma is 140 000 cases, as estimated by the WHO, of which the majority lives in the savannas directly South from the Sahara Desert.² In previous centuries noma was seen commonly in Europe and the USA as well,³ when famine was still prevalent there. The most informative publication about noma has been written by Michael Tempest, a pioneer of facial reconstructive surgery in noma patients.³

The disease is classified in the International Statistical Classification of the WHO under code A69.0: Necrotising Ulcerative Stomatitis (Cancrum oris, Fusospirochaetal gangrene, Noma, Stomatitis gangrenosa). Of these medical names cancrum oris and noma are used most frequently.

The etymology of noma and cancrum oris

Noma is the latinised form of the classical Greek word νομη. The word has been derived from the verb νεμω, 'I pasture the cattle'. The stem is νεμ-/νομ-. Νομη means 'pastureland' but also 'the grazing'. Also in a metaphorical sense the word was used in classical times for a continuing process of a fire or an ulcer: a wildfire as we now say. The Greek historian Polybius (2nd Century before Christ) wrote 'the wound made himself a nome', meaning that the wound was becoming

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Fig. 1 African girl with several sequelae of noma including disfigurement, trismus, oral incontinence and speech problems.

progressively larger. And in the New Testament we can read the word 'nome' in the second letter to Timotheus 2,17 about the disciples: 'their teachings shall have a pastureland like gangrene'.⁴

'Cancrum oris' is the accusative case of 'cancer oris' meaning mouth cancer. 'Mouth canker' and 'water canker' were the popular names for the facial gangrene both in English and in Dutch several centuries ago. An explanation for the use of the accusative form of cancer oris is given in the next paragraph.

Historical backgrounds

Classical authors as Galenus⁵ and Celsus⁶ already used the word 'nome' but with the meaning of an expanding ulcer and not specifically for a quickly expanding facial gangrene in children. The first clinical description of the affection was not published until 1595 by Battus.⁷

The first time, as far as is known, that the term 'cancrum oris' has been printed, was in 1649 in Arnoldus Boot's book *Observationes medicae de affectibus omissis* (Medical observations about



Fig. 2 Cornelis van de Voorde, chirurgion from Middelburg, The Netherlands, used the Greek word noma for the first time in 1680.

omitted affections) published in London.⁸ Boot, who not only studied medicine but also classical languages, used a Greek (cheilocace) and a Latin (labrosulcium) neologism in the title of his Latin text, and used (grammatically correct) the improper Latin term 'cancer oris' in the accusative case 'cancrum oris', referring to a popular name of noma in Great Britain, 'mouth canker'. In later times authors, ignorant of the proper use of cases, copied the term 'cancrum oris' to the surprise and annoyance of others. Coates, a physician of the Philadelphia Children's Asylum at the beginning of the 19th Century, already wrote:

'*Cancrum*' is an odd grammatical blunder; being, in reality, nothing but the accusative of Cancer, put instead of the nominative. The latter name was, as is well known, frequently applied by the older surgeons, in a vague manner, to any terrific and unmanageable ulcer;....⁹

The use of this odd grammatical blunder persists to this day for reasons of ignorance or tradition.

It was Cornelis van de Voorde, chirurgion in Middelburg, The Netherlands (Fig. 2), who used the word noma in 1680 for a quickly spreading ulceration originating in wet soft tissues in children, 'almost typical of the mouth', because this

De ziekte wordt bij verschillende schrijvers door verschillende namen aangeduid, zooals: *Cancer aquaticus sive aquosus*. *Cancrum oris infantium*. *Stomacace*. *Stomacace gangraenosa s. maligna*. *Ulocace*. *Cheilocace*. *Stomatitis gangraenosa*. *Gangraena oris*. *Gangraena acutissima caseosa s. pulposa*. *Stomatomalacia putrida*. — Affection gangrèneuse de la joue. Affection gangrèneuse de la bouche particulière aux enfants. Ulcère malin de la bouche. Stomatite charbonneuse. — Cancer of the mouth; Mouth-cancer. Gangrenous erosion of the cheeks. — Wasserkrebs; Mundkreb; bösartiges, faules oder gangränöses Geschwür im Munde der Kinder. Kinderbrand. Wangenbrand. Lippenbrand. Mund und Rachenbrand; Mundfäule; bösartige oder brandige Mundfäule.

Fig. 3 List of synonyms for noma from the academical thesis *Over ulcus noma* (about ulcus noma) of D.A. von Eichstorff Talma (Groningen, The Netherlands, 1859).

ulcerative process was different to cancer.¹⁰ The restriction 'almost' by Van de Voorde implicates that this quickly spreading gangrene may also originate in other wet soft tissues, which indeed is true. In the past the word noma has been used as well for genital gangrene in young girls, a less frequently described affection in previous centuries,^{11,12} that has disappeared from current medical literature completely for uncertain reasons. The name noma got adopted widely soon after its introduction and its present use is restricted to the orofacial gangrene.

Synonyms

Many synonyms for noma were in use in previous centuries to name the orofacial gangrene. Von Eichstorff Talma even listed them in his academical thesis *Over ulcus noma* (About ulcer noma) (Fig. 3).¹³ His list was far from complete because he missed contemporary terms as 'cancer scorbuticus labii', 'schwartzter Krebs', 'Todtenwurm', 'aphthae serpentes' and 'gangraenopsis'. The presence of a large number of synonyms for the same affection together with other historical data indicate that noma was commonly seen in Europe and USA in previous centuries.

In Hausa, the most important language in the North of Nigeria, the disease is named 'ciwon iska', 'the disease of the wind'. This is a very aspecific name because due to a common lack of knowledge about the origin of diseases, most of them are being blown up by the wind there. In recent years this has caused a problem for the health authorities in Sokoto State, Nigeria,¹ when they wanted to call up by radio noma patients for a surgical rehabilitation project. They invented the descriptive neologism 'bakin kare', meaning 'mouth of dog'. This proved to be a quite good though not completely adequate description, because subsequently not only numerous noma patients showed up but also many patients with a cleft lip. Both were treated without distinction.

Conclusions

Necrotising ulcerative stomatitis is the descriptive name of the orofacial gangrene in children, better known in medical literature as *cancrum oris* or *noma*. The many historical synonyms indicate together with other historical data that the disease was common in Europe in previous centuries. Both *cancrum oris* and *noma* are old medical terms for this gangrene. Though *cancrum oris* has first claim, it is based on ignorance of the incorrect use of the improper Latin words 'cancer oris', for which reasons one should consider to give preference to the word *noma* to name the affection that still scourges the poorest in the world on a large scale.

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¹ The British N.G.O. 'Facing Africa' is involved in an international project for the surgical rehabilitation of noma patients in Sokoto, Nigeria. Readers who are interested in the project can obtain more information through: www.facingafrica.org/e-mail: info@facingafrica.org or contact Chris Lawrence, Seend Park, Seend, Wiltshire SN12 6NZ.

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