Yaws Revisited

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Summary

An outbreak of yaws consisting of ten active cases in Baling is described. Yaws should be suspected and considered in the differential diagnosis of sores in the limbs of children living in rural areas. The clinical features of yaws are highlighted to help in the recognition of the condition for those unfamiliar with the condition.

Key words: Yaws, outbreak, clinical features, control strategy.

Introduction

Yaws appeared to have been eradicated in Malaysia due mainly to the highly successful Yaws Elimination Campaign sponsored by WHO and UNICEF from 1954 to 1963. In 1948 over 100,000 cases of yaws were treated in Malaya.[1] In the 1960's, yaws were almost completely cleared and no cases were seen in places where thousands were present before the Elimination Campaign. In the 1970's, sporadic cases of yaws began to reappear in endemic areas. In recent years, small outbreaks of cases of yaws were seen in states like Pahang, Kelantan, Johore, Penang and Kedah (personal communications). This has also been the experience in other countries especially in Africa where the elimination programmes were initially very successful.[2] The problem of yaws is still with us; it is a disease that refuses to die.

An outbreak of yaws consisting of ten cases occurred in Assam Jawa near Baling between 1986 and 1987. Doctors who had initial encounters with these cases were not confident of making the diagnosis of yaws. During a slide presentation of these cases, many of the younger doctors were unable to recognise the disease, whereas the older doctors who had experience with the condition had no difficulty. Young doctors nowadays are unlikely to see patients with yaws in their training. The clinical features of yaws are highlighted to help familiarise those who may not have seen any case. Yaws should be suspected and considered in the differential diagnosis of sores on the limbs in children living in rural areas in the tropics,[3] including Malaysia.

Materials and Method

In August 1986, the index case (case 1) of yaws presented to Baling District Hospital. Subsequent contact tracing in Assam Jawa, the village from which the patient came, revealed another seven active cases of yaws. In April 1987, a further two cases of yaws were seen from the same village.

Results

The clinical details of the patients are listed in Table 1.

Nine out of the ten patients were below 15 years of age. Six patients presented with the typical features of papillomata or crab yaws. Three patients presented with ulcerated lesions, while one presented with the rather rare pianic onychia.

There were three groups of siblings, namely patients one and two, three to six and nine and ten. Patients seven and eight were the uncles of the second group of siblings.

Table 1
Features of patients with yaws

Case	Age	Sex	Clinical features	VDRL	TPHA
1	5	F	Papillomata at right middle finger and toes	1:8	Positive
2	13	F	Ulcerated papules at legs, atrophic hypopigmented scars at legs and feet	1:8	Positive
3	12	F	Ulcerated nodular lesions and hyperkeratotic patches (crab yaws) both soles	1:4	Not done
4	11	F	Ulcerated nodular lesions (wet crabs) at left big toe	1:16	Positive
5	8	M	Hyperkeratotic patches (crab yaws) at left sole	1:8	Positive
6	1	F	Ulcerated papule at left little finger nail fold (pianic onychia)	1:8	Positive
7	13	M	Hyperkeratotic plaques at right sole and left toes	1:32	Positive
8	20	M	Ulcer at left big toe. X-ray showed bony erosion	1:32	Positive
9	5	F	Papillomata at palms, right middle finger, left knee and between left 3rd and 4th toes	1:8	Positive
10	14	M	Ulcerated lesions at left knee and scalp	1:4	Not done

Discussions

Our patients illustrate some characteristics of yaws, namely children less than 15 years commonly affected, found in poor rural areas, affecting the indigenous population and family contacts.[4] Six out of the ten cases presented with the typical features of yaws. Although three cases presented with rather non-specific ulcerated lesions, combined with the history of close contact with family members with yaws and positive serology (in children), the diagnosis of yaws was certain.

Yaws is a chronic non-venereal treponematosis caused by *treponema pertue.* The disease is known by different names; pian in French, frambesia in German, bouba in Spanish, puru or parangi in Malay.[5] It is endemic in warm, humid tropical regions and abounds in rural areas of low altitude with poor drainage and luxuriant vegetation. Poverty, over-crowding, poor hygiene and scanty clothing are predisposing factors. The indigenous population is predominantly affected. It is said that yaws begins where highways end.

The disease is classified into early infections and late non-infectious yaws. Early yaws (Figure 1) include the primary and secondary yaws of the older classification, and the early part of latent

yaws up to five years after infection. Late yaws include latent yaws of five years and over and tertiary yaws.

The initial primary lesion (mother yaw, framboesia) develops after an incubation period of 3–6 weeks. It arises at the site of inoculation of the organism; thus the exposed parts of the legs, arms and buttocks are common sites. The usual lesion is a papilloma or verrucous papule, that later ulcerates and becomes covered with exudate swarming with the treponemes or a yellowish crust. It tends to heal spontaneously after two–six months, leaving large atrophic scars with an achromic or hypopigmented centre.

The secondary stage lesions (daughter yaws, framboesiomas) appear after the primary lesion heals, or overlapping it, between the second and fourth month after onset. They consist of disseminated exudative papillomata which resemble raspberries, and resemble the mother yaws except that they are smaller and multiple. They are widely distributed, but often seen around the body orifices such as the nose, mouth, vulva and anus. At times peripheral extension of the lesions produce "circinate yaws" or the so-called tinea yaws. Lesions occuring on palms and soles produce papillomata and hyperkeratotic plaques (crab yaws) (Figure 2). Other lesions include pianic onychia where the periungal region is affected producing deformities of the nail fold, and rupia. Although the general health may be little affected, the picture is one of misery.

Late yaws affect the skin, bones and joints. The manifestations are gummatous nodules and ulcerations, keratoderma of palms and soles, achromia, osteitis and periostitis, hydrarthrosis, juxta-articular nodes, gangosa (deforming rhinopharngitis leading to destructive ulcers of the nose), goundou (exostoses or hypertropic osteitis of the nasal bones) and ainhum.[6]

Figure 1. Verrucous papillomata of early yaws.

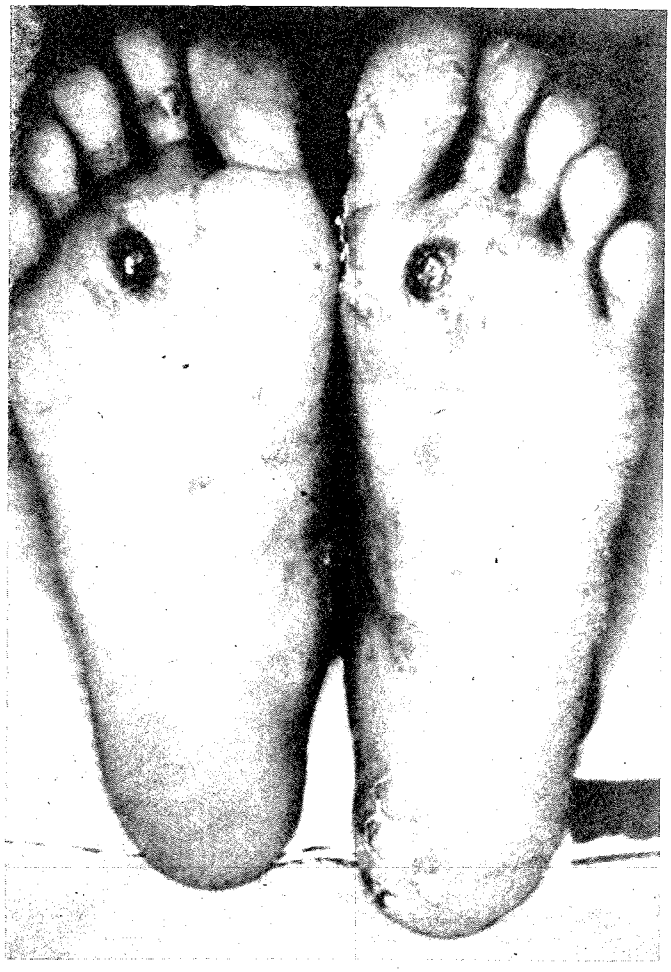

Figure 2. Papillomata and hyperkeratotic plaques (crab yaws) at the soles.

Diagnosis is based on the history of place or country of origin, clinical features, demonstration of the treponemes under dark ground illumination and serological tests. The serological tests (both reagin and specific) do not distinguish yaws and syphilis, though high titres in the reagin tests are more likely to be due to syphilis than old yaws.[7] A high index of suspicion is important for the diagnosis of yaws in a patient from an endemic area presenting with a dermatosis with the features described.

The treatment of yaws is penicillin. A single injection of benzathine penicillin or PAM (penicillin G in 2% aluminium monosterate) 1.2 to 2.4 mega units, depending on age, is sufficient. All contacts of patients should receive one half of the therapeutic dose.

For yaws to be eradicated, the control measures need to be strictly adhered to. Current WHO strategy calls for "total mass treatment" of everyone in hyperendemic communities (10% prevalence of clinically active yaws), "juvenile mass treatment" of all prepubescent children, other contacts and overt cases in mesoendemic communities (5–10% prevalence), and "selective mass treatment" of cases and their contacts in hypoendemic communities (5% prevalence).

Resurveys and appropriate mass treatments are repeated at six to 12-month intervals for a few years until prevalence of active yaws falls below 2%, when the campaign ends, and the general public health staff assumes surveillance and treatment functions.

Donald Hopkins was of the opinion that not pursuing yaws cases aggressively after prevalence falls to relatively low levels was the most important deficiency of current strategy.[8] He suggested a modified yaws strategy, emphasizing a selective rather than a mass campaign, concentrating surveillance and containment efforts first in areas of highest prevalence, focussing on infectious individuals and their contacts, and intensifying control activities during periods when yaws incidence is naturally diminished. After that, this question can be asked – after smallpox eradication: yaws?

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