OSTEOLYTIC LESIONS IN EARLY SYPHILIS*

BY

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Many physicians are reluctant to accept osteolytic lesions as manifestations of early syphilis. With the advent of penicillin, the importance of a routine serological test for syphilis (STS) is sometimes forgotten. Such a routine test is often a useful diagnostic tool in making a correct diagnosis, particularly when the clinician is confronted with one of the less common manifestations of syphilis. The need to emphasize these two facts—the occurrence of osteolytic lesions in early syphilis and the importance of a routine STS—constitutes the stimulus which prompted the following report.

Case Report

A 26-year-old Caucasian female was admitted to hospital in January, 1965, because of a sharp stabbing headache with localized tenderness in the right frontal area of 3 weeks' duration.

Examination There was a tender painful area in the right frontal region. Other significant findings were an erosion of the cervix and bilateral firm non-tender inguinal adenopathy but no generalized adenopathy. A few days after her admission to hospital several small papulo-squamous lesions appeared on the elbows. There were no other lesions of the skin or mucous membranes.

A skull film on admission revealed a poorly-defined area of bone destruction (Fig. 1) involving the outer table of the right frontal region. The Venereal Disease Research Laboratories (VDRL) slide test was reactive and the Kolmer Wassermann reaction was reactive to a dilution of 1:128. *Treponema pallidum* immobilization (TPI) and fluorescent treponemal antibody (FTA-200) tests were also positive. Dark-field examinations of

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FIG. 1.—Destructive lesion of the outer table of the skull in the right frontal region.

the skin lesions and of the cervical erosion were negative. Cervical biopsy revealed chronic cervicitis and a biopsy of the skin lesions was reported as consistent with secondary lues. Examination of the cerebrospinal fluid revealed a normal cell count and protein level, and a non-reactive Kolmer test. X rays of the spine, chest, long bones, and pelvis were within normal limits. Fasting blood sugar, blood urea nitrogen, potassium, sodium, prothrombin time, lactic acid dehydrogenase, protein-bound iodine, urine analysis, and complete blood count were all within normal limits. Protein electrophoresis showed a slightly raised gamma globulin (1.9 g./100 m.).

Diagnosis Because of the reactive serological tests for syphilis, the patient was questioned regarding previous infection, but there was no history of skin lesions of any kind; 2 years previously she had had a non-reactive VDRL test and a pre-marital STS had been non-reactive 11 months before her present illness. Because of this well-documented past history her disease was considered to be early lues. A diagnosis of a lytic lesion of bone due to early syphilis was made and no biopsy of the frontal bone was performed. Her sexual contacts were examined, and one of them was found to have early latent syphilis and was considered to be the source of her infection.

Treatment 600,000 units of aqueous procaine penicillin G daily for 10 days resulted in prompt relief of pain. The patient experienced a brief period of fever and chills several hours after the first injection. The

lesions on the elbows slowly resolved, and 3 months after penicillin was started, a partial resolution of the osteolytic lesion was noted on roentgenogram. 11 months after treatment only a very small area of rarefaction was present at the site of the original lesion (Fig. 2). The Kolmer Wassermann reaction was reactive to a dilution of 1:4, the FTA-200 was reactive, and the TPI was non-reactive on two occasions.

Comment

Bony involvement is a frequent manifestation of late syphilis. Periostitis is the most common lesion and the areas involved in order of frequency are the cranial bones, tibia, shoulder girdle, spine, femur, humerus, fibula, and small bones of the hand (Stokes, Beerman, and Ingraham, 1944). Syphilitic osteitis is the least common bony lesion of late lues, but a localized gummatous process producing necrosis and destruction of bone does occur especially in the cranial bones.

In early lues, proliferative lesions of the bone occur, accompanied by pain and localized tenderness, but lytic lesions are reported to be extremely rare (Reynolds and Wasserman, 1942). In the present case, it was possible to classify the patient's lues as early because of a well-documented past history.

A review of the literature reveals 42 reported cases of lytic lesions of bone occurring in early

FIG. 2.—Same area as Fig. 1, 11 months after treatment.

syphilis. A study of 10,000 cases of early lues by Reynolds and Wasserman (1942) revealed fifteen cases with osteolytic lesions. The manner in which this study was performed may have yielded a low incidence of this manifestation, since the scope of the study precluded x-ray examination in any but symptomatic cases. Thompson and Preston (1952) obtained a higher incidence in their study of eighty patients with early lues. Their investigation did not involve a complete bone survey, but skull films were taken for all eighty patients, and seven (8·7 per cent.) of the group had lytic lesions demonstrable by x ray. The authors state, "Had all patients received a complete bone survey, it is probable that many extremity and shoulder girdle lesions would have been discovered." Thus the incidence of destructive lesions of bone in early lues may vary from 0·15 to 8·7 per cent.—depending on the scope of the bone survey.

The chief symptom is pain which is worse at night. Localized tumefaction with tenderness on palpation may be present (Stokes and others, 1944). Skin lesions of secondary syphilis may follow the bone lesions or may never occur. In descending order of frequency those involved are the cranial bones (the frontal, the parietal, and the nasopalatine) and the sternoclavicular bones. The most frequent type of involvement is a destructive osteitis, but osteoperiostitis and osteomyelitis may occur. The skull film shows circular areas of decreased density having a moth-eaten appearance. If the periosteum is involved there is swelling of the soft tissue or wavy periosteal markings parallel to the surface of the bone (Thompson and Preston, 1952). Pain subsides quickly after treatment and the bone lesions heal without residua in most

instances (Glaser and Scott, 1947). The period of time required in the present case was one year.

Summary

The most significant finding in a young woman with early syphilis was a painful tender tumefaction in the right frontal area which proved to be an osteolytic lesion. The incidence and symptoms of such lesions are discussed. Emphasis is placed on the occurrence of destructive lesions of bone in early lues and the importance of a routine STS in directing the attention of the clinician to syphilis, a protean disease, aptly called "the great imitator".

REFERENCES

- Glaser, R. J., and Scott, V. (1947). *Amer. J. Med.*, **3**, 496.
 Reynolds, F. W., and Wasserman, H. (1942). *Arch. intern. Med.*, **69**, 263.
 Stokes, J. H., Beerman, H., and Ingraham, N. R. (1944). "Modern Clinical Syphilology", 3rd ed., p. 770. Saunders, Philadelphia and London.
 Thompson, R. G., and Preston, R. H. (1952). *Amer. J. Syph.*, **36**, 332.

Les lésions ostéolytiques dans la syphilis précoce RÉSUMÉ

La constatation la plus significative chez une jeune femme atteinte de syphilis précoce était une tuméfaction sensible et douloureuse dans la région frontale droite qui a été prouvée comme étant une lésion ostéolytique. L'incidence et les symptômes de ce genre de lésion sont discutés. On fait ressortir que l'apparition des lésions destructives du système osseux dans la syphilis précoce et l'importance des tests sérologiques réguliers pour la syphilis attirent l'attention du clinicien vers la syphilis, cette maladie variable qui a été appelée avec beaucoup d'à propos "la grande imitatrice".