

TOPHACEOUS GOUT IN A 17-YEAR-OLD MALE

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Gout is usually regarded as a disease of middle life but it may appear in early life, particularly when there is a strong hereditary tendency (Copeman, 1948). Bernstein (1947) reviewed several published series of gout and found that symptoms began before the age of 20 years in 2.4 per cent. of 1,005 patients. Several other reports of juvenile gout have appeared (Garrod, 1876; Bernstein, 1947; Rausch, 1950; Flinchum and Powers, 1951; Hartlieb, 1954; Recht, 1954) and Gairdner (1854) even claimed to have seen gout in infants at the breast.

Although tophi are present at the onset of gouty arthritis in 2 per cent. of cases (Copeman, 1948), the average time between the onset of clinical gout and the appearance of tophi is 15 to 20 years (Bernstein, 1947). It is therefore not surprising that in most of the published cases of juvenile gout tophi were absent or did not develop till the patients were much older. Talbott (1957) and Berk (1948) each report a patient in whom tophi appeared before the age of 20 years but 12 years and 7 years respectively after the onset of symptoms. Schopf (1930) described an unusual case of fulminating tophaceous gout in a 5-week-old infant. Juvenile tophaceous gout associated with blood dyscrasia also occurs (Vining and Thompson, 1934; Lambie, 1940). The patient described below developed multiple tophi a year after the onset of gouty arthritis at the age of 15 years.

Case Report

The patient was a youth of 17 years who worked as a vegetable market porter. Eighteen months before admission he suddenly developed pain and swelling in the proximal interphalangeal joints of the right middle three fingers and the left middle finger. The skin overlying the affected joints was slightly reddened. Within a few days both ankles and the metatarso-phalangeal joints of both big toes were also affected.

A diagnosis of acute rheumatism was made and he was treated at home with bed rest and aspirin.

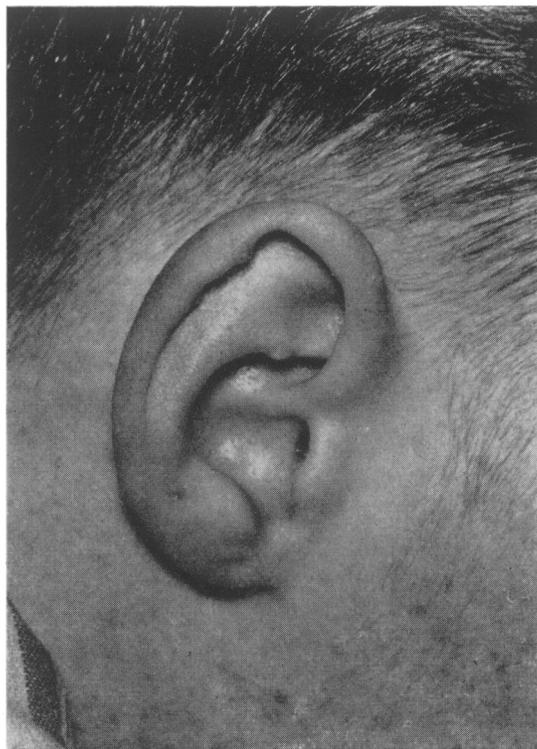


FIG. 1.—Gouty tophi in the right pinna.

The arthritis slowly subsided over a period of two months but a month later both elbows became swollen and painful and remained so for a month. After an interval of three months his ankles, big toes and elbows were all affected simultaneously for a period of three months. Six months before admission he had an attack of left renal colic with macroscopic haematuria. He was referred to a genito-urinary clinic where intravenous and retrograde pyelography revealed no abnormality. At about the same time he was seen by an orthopaedic surgeon who diagnosed rheumatoid arthritis and prescribed a course of gold injections. Shortly



FIG. 2.—Tophi around the left elbow.

afterwards the patient noticed the presence of small nodules in his right pinna, over the right patella and both elbows. Intermittent arthritis continued until his admission to hospital.

Physical Findings

Pale, ill-looking youth. Temperature 98.4° F. Five white pearly nodules were present in the right pinna (Fig. 1), small subcutaneous nodules over the right patella and right second metacarpo-phalangeal joint, and large yellowish nodules were present in both olecranon bursae (Fig. 2), the left one having ulcerated through the skin. Effusions were present in knees and elbows with pain and limitation of movement. The metatarsophalangeal joint of the right big toe was swollen and red and there was spindle deformity of the interphalangeal joints of the right three middle fingers. Pulse 90 per min., regular, blood pressure 140/90 mm.Hg. Other systems normal.

Investigations

Urine: Albumin and sugar absent; maximum specific gravity, 1016; occasional red cells and granular casts on microscopy. *Haemoglobin:* 14.2 gm. per cent. *W.B.C.:* 11,250 per c.mm.



FIG. 3.—Tophi near the second metacarpo-phalangeal joint.

Blood films normal. *E.S.R.:* 78 mm. in 1 hour (Westergren). *Blood urea:* 44 mg./100 ml. *Serum uric acid:* 12.2 mg./100 ml. X-rays of chest and affected joints showed no abnormality.

Material from the ulcerated tophus was identified as urate by the murexide reaction (Harrison 1949), and on microscopy.

Treatment

He was treated initially with Colchicine 1 mg. two-hourly by mouth for 12 hours with marked symptomatic improvement. 'Benemid' (probenecid, or p-(di-n-propyl sulphamyl)-benzoic acid) was then given orally in a dose of 1 gm. twice daily, together with a high fluid intake and a low purine diet. This treatment has been continued and apart from a transient recurrence of arthritis ten days after its commencement the patient has remained symptom-free. He has returned to work as a vegetable market porter and has not missed a day's work during the past nine months, whereas he had been off work for 12 out of the 18 months prior to admission.

After nine months' treatment the tophi and finger deformity are still present but the sinus over the left olecranon bursa has healed. The urine is now chemically and microscopically

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normal—blood urea 16 mg./100 ml., and serum uric acid 7.4 mg./100 ml.

Comment

Juvenile gout often differs from adult gout in the absence of classical podagra and the frequent occurrence of polyarthritis (Bernstein, 1947). This led to diagnostic difficulty in this patient but at the time of his admission to hospital the presence of multiple gouty tophi, together with the recurrent acute peripheral arthritis, enabled a clinical diagnosis of gout to be made which was confirmed by the high serum uric acid level. The occurrence of symptoms at an early age usually presages severe and frequently recurring attacks (Talbot, 1957). The attack of renal colic and haematuria in this patient was probably the result of a uric acid calculus. The microscopic haematuria and cylinduria with impaired renal concentrating power suggests that parenchymatous renal involvement had also occurred. No family history of arthritis was obtained and the serum uric acid levels of the available relatives were all within the normal limits of 4 to 6 mg./100 ml. (Talbot, 1957). There was no evidence of blood dyscrasia in this patient and his diet appeared to be normal.

Summary

The occurrence of tophaceous gout in a young

man of 17 years is described. Recurrent arthritis began at the age of 15 years and multiple tophi appeared a year later. Uric acid calculus formation and parenchymatous renal involvement were thought to have occurred. The response to 'Benemid' therapy has so far been satisfactory.

Acknowledgments

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