IV

Gout

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Do not make the mistake of thinking that every case of gout is one of primary gout; one always has to exclude the possibility of secondary gout. There may be two types of both primary and secondary gout—one due to overproduction of uric acid and the other to its defective excretion. At the moment this is an academic point although it may be of use in the future. Secondary gout can also be due to overproduction of uric acid as in leukaemia or sometimes in congenital heart disease, but our cardiological colleagues are also perhaps producing more cases of gout caused by defective excretion by using various drugs in hypertension which may incidentally reduce the excretion of uric acid and they may therefore increase the incidence of this very interesting and very treatable disease.

Primary gout is a genetically determined disease. I do not believe that it is caused by alcohol, though if persons with the genetic tendency indulge in an excess of anything, including alcohol, it may precipitate gout. I certainly do not believe that gout is caused by drinking whisky, and indeed it is practically unknown amongst Scotsmen. The diagnosis of gout is important for two reasons; firstly, because it is an eminently treatable disease, and secondly because if the acute attack is treated wrongly recovery may be delayed. As somebody said recently—medical treatment had to be extremely bad to delay recovery, and this is one of the few conditions in which the latter can be successfully achieved.

Clinical diagnosis of gout is easy when it affects the big toe. In hospital we practically never see patients with gout affecting the big toe because general practitioners treat them. We see only gout in other joints such as the elbow, the wrist, or the knee, since the diagnosis is apt to be missed when the disease presents in these joints, because they are not necessarily inflamed. One is always told that the acute gouty joint is red and discoloured; this may be so in the big toe, but it is not always so in the larger joints such as the elbow, or wrist. However, other features are present which should make you never miss an acute attack. Firstly, there is the quality of the pain, which is so very severe that the human language is inadequate to describe it. If you ask what the pain is like, the patient will either give up and say, " I can't describe it, doctor ", or will launch into a long description of what the pain is like; both these reactions should alert you. I used to make a collection of descriptions of the pain. I think the best one was that of Professor Wood Jones, the anatomist, who said it was as if his foot had been put into

a vice, the vice had been turned until the pain was intolerable, and then it was given one more full turn. This sort of description of the pain should alert one immediately. " A million ants in the joint " was another description, and of course there is the classic one of " a dog gnawing at the bones ". The second characteristic of the acute gouty joint is that it is extremely tender. If you squeeze a joint between finger and thumb, you will get a series of reactions from the patient and one can have four grades of tenderness—grade I: the patient will simply smile and say, " That is a little tender, doctor "; grade II: he will wince; grade III: he will wince and withdraw; grade IV: he will either say, " Don't you dare touch that joint ", or he will punch you on the nose. Grade IV tenderness occurs in gout; it never occurs in rheumatoid arthritis, and in fact it occurs only in two other conditions which are easily distinguished. One is rheumatic fever and the other is acute suppurative arthritis.

One other feature of the gouty joint is that the skin over the joint is dry; an acutely inflamed joint, with grade IV tenderness and a dry skin is never seen in any condition except gout. The chronic gouty joint should not be missed, although the deformity can resemble that seen in rheumatoid arthritis (figure 4). The only point I would

Fig. 5

" The earlier you start treatment the better "

(Reproduced by kind permission of the Empire Rheumatic Council from their pamphlet " *Gout:* A Handbook for Patients ").

like to make about radiography is that if somebody brings a radiograph to you and says, "I think I have got a patient with gout, have a look at these x rays", you need not bother to look at them. You can say that the patient has rheumatoid arthritis, because if a radiograph is needed to diagnose gout the patient probably has not got gout. You should be able to diagnose it clinically. Olecranon bursitis can occur in gout, but is probably commoner in rheumatoid arthritis.

It is important to start treatment of the acute attacks early, and you must brief your patient to start early. It is probably better to supply him with the necessary tablets and then he does not need to disturb you (figure 5). Colchicine is, for some, the drug of choice, but in my own view phenylbutazone is just as good if not better, in a dose of 600 mg. per day. I use phenylbutazone as the drug of choice now. My reluctance to give up colchicine is due only to the fact that we have been using it for fifteen centuries and it seems a shame to give it up before we discover how it works. The other way we treat gout is by chemical control; in other words we use drugs to get rid of the uric acid from the body and this will provide chemical control of the disease from which will follow, after quite a delay, some degree of clinical control. So we use phenylbutazone or colchicine for the acute attack, and then chemical control can be achieved by use of one of the uricosuric drugs. Salicylates are potent uricosuric agents if given in adequate dose, that is to say 90 grains a day, or 18 tablets of aspirin a day for the rest of the patient's life. I don't know whether Dr Duthie undertakes that treatment, but my patients will not accept it. Probenecid (benemid) is a very effective and relatively non-toxic drug, and can usually be taken safely without intolerance. A variant of it is urelim, which has much the same structure as probenecid. Zoxazolamine you can forget about, for it has been withdrawn by the manufacturers and is no longer available. It was a very effective uricosuric agent, but it apparently caused a few cases of hepatitis. Finally sulphinpyrazone or anturan is the most potent of the uricosuric drugs. Probenecid will reduce the serum level to somewhere around 70 per cent of the pre-treatment level, and sulphinpyrazone will reduce it a good deal lower than that.

These drugs lower plasma uric acid levels rapidly and the uric acid output in the urine goes up rapidly also. However, you can precipitate acute attacks of gout by producing a marked uricosuria, and one of the ways you can delay recovery from an attack of gout is by attempting chemical control with a uricosuric agent when a patient has an acute attack of gout. This is not the time to start trying to achieve chemical control; it should begin at a stage when

the gout is quiet. Furthermore, this means a lifetime of treatment. We cannot prevent the patient over-producing uric acid, so that there is no particular hurry to produce a marked diuresis; start with small doses and then gradually build them up, controlling them by measuring the level of uric acid in the serum. The uric acid output in the urine goes up and this may produce renal complications (gravel, renal colic, and stone). During the phase when you are attempting chmical control it is probably just as well to give the patient a 0.5 mg. tablet of colchicine twice a day until the patient has had a long period of freedom. During this time tophi may be reabsorbed, but the process is slow, and if there are a lot of big tophi it is just as well to remove some of them surgically.

In addition to the uricosuric drugs there are anti-uricosuric drugs, and among these are the salicylates; given in small doses, they will decrease the excretion of uric acid. I think this is why one so commonly sees patients with rheumatoid arthritis and a slight elevation in the serum uric acid level, which confuses the diagnosis. This is because they are taking relatively small doses of aspirin. Moreover, aspirin pretty effectively blocks the action of the uricosuric drugs, so that patients who are on benemid or anturan have to keep off aspirin altogether. This is another reason why it is not really effective to give salicylates for chemical control, because patients probably will not take the full dose and the drug may then have the reverse effect. Chlorothiazide and hydrochlorothiazide will also decrease uric acid excretion. Mecamylamine and pempidine, perhaps not used quite so much, may every now and again produce a definite hyperuricaemia and we suspect, although we are not absolutely sure, that the use of these drugs for a long time may produce secondary gout. They can certainly precipitate gout in a genetically determined subject.

In gout, there may be gross urate deposits in the kidney (fig. 6). This shows crystals of uric acid, incidentally, and not the one frequently observed, sodium biurate. There may well be more to this than just deposition of uric acid in the kidney however, for there is a suspicion that hyperuricaemia itself may be harmful to the renal tract. Renal biopsy may show a little increase in the interstitial tissue; occasionally a considerable increase in interstitial fibrous tissue may be seen. I would suggest that we think of gout not only in terms of the joints, but also bearing in mind that hyperuricaemia of itself may be harmful; we should therefore undertake chemical control of the disease early rather than late. We should not just wait for the attacks of gout to become so frequent or urate deposits to show as tophi before we treat it.

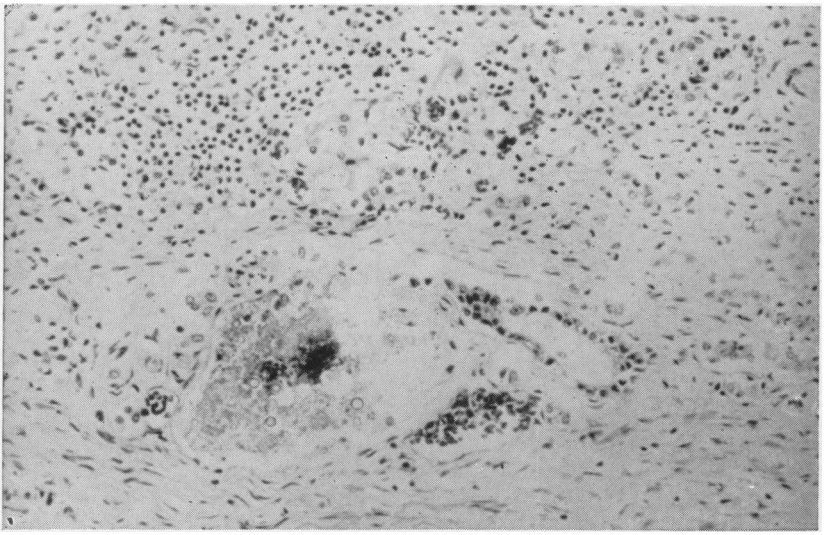

Figure 4—Uric acid crystals in the renal tubule

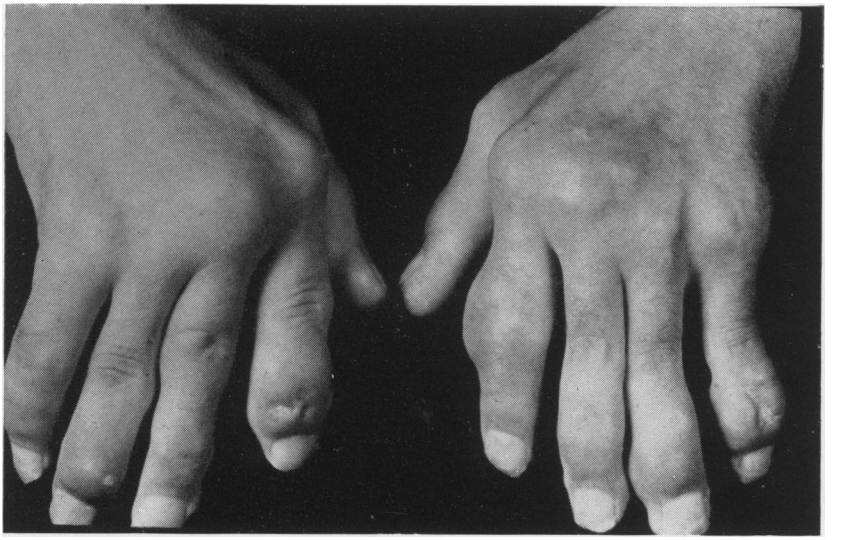

Figure 6—Tophaceous gout affecting the hands causing "ulnar drift" at the metacarpo-phalangeal joints