Comment

That Q fever endocarditis can be intractable is well recognised and recurrence after valve replacement well known.[1 4] Nevertheless, good results are reported with tetracycline[1] even in the difficult field of prosthetic endocarditis,[5] though treatment may have to be continued for five years or more. Tetracycline could not be used in our patient, and the striking feature was the florid nature of the relapses occurring after an initial response to each of the antibiotics used. At operation and necropsy vegetation was luxuriant and *C burnetii* present in abundance despite prolonged and continuous treatment with co-trimoxazole, rifampicin, and lincomycin.

Where success has been reported with these drugs[1-3] they have been used in combination with or after treatment with tetracycline. We consider that there is still no acceptable substitute for tetracycline as the mainstay of treatment in Q fever endocarditis. Should circumstances arise again where tetracycline could not be used in a patient with Q fever endocarditis increased doses of rifampicin in the presence of normal liver function or even the use of chloramphenicol might be considered.

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Nitrofurantoin-induced parotitis

Nitrofurantoin is known to cause toxic and type III cell-mediated allergic reactions. The risk of these increases with age and they are more likely to occur in women than in men. Holmberg *et al*[1] divided the side effects of nitrofurantoin into six categories: (*a*) acute pulmonary reactions; (*b*) chronic pulmonary reactions; (*c*) allergic reactions, including various types of cutaneous manifestations (exanthema, erythema, urticaria), fever, and anaphylactic reactions; (*d*) liver damage and gastrointestinal disturbances; (*e*) blood dyscrasias; and (f) neuropathy.

We report a parotitis-like clinical condition induced by nitrofurantoin.

Case report

A 78-year-old woman was admitted with acute onset of bilateral painful swelling of the parotid gland, dry mouth, and fever of 39°C. She gave a history of arterial hypertension and moderate heart failure, for which she had taken regularly digoxin 0·25 mg, α-methyldopa 750 mg, and hydrochlorothiazide 100 mg daily. She denied taking any other medication. Recurrent urinary tract infections had responded to sulphonamides.

On admission she had a parotid swelling. Pulmonary auscultation indicated minor basal râles. Thoracic *x*-ray films showed an enlarged heart, pulmonary venous congestion, and interstitial extravasation. The only abnormal laboratory findings were a raised erythrocyte sedimentation rate (57 mm/first hour), moderate leucocytosis ($12{\cdot}4\times10^9$/l), and raised serum amylase activity (3533 U/l; normal range < 300 U/l). The fever, parotid swelling, leucocytosis, and raised serum amylase activity disappeared within two days; pulmonary auscultation showed no abnormalities. Hydrochlorothiazide was substituted by frusemide 80 mg daily. The patient had no history of mumps, and this was the diagnosis made on discharge four days after admission.

She was readmitted the next day with the same symptoms and signs as previously. Her original medication was continued and the parotid swelling and fever disappeared within 24 hours. Serum amylase activity was not increased. Chest *x*-ray films showed that the interstitial extravasation was slightly less. Her daughter reported that 13 days before the first episode of parotid swelling her mother had begun taking nitrofurantoin 50 mg twice daily for a urinary tract infection. Before the second episode of parotid swelling she had taken nitrofurantoin 50 mg six hours earlier.

Since swelling of the parotid gland due to nitrofurantoin has not to our knowledge been previously reported we decided to study a possible hypersensitivity to the drug by giving her 50 mg nitrofurantoin under observation. Four hours after taking the drug she complained of dry mouth, and prominent swelling of the parotid gland was evident. Estimations of blood eosinophils values, serum amylase, serum aspartate aminotransferase and serum alanine aminotransferase activity and autoimmune studies were performed just before the test and 24 hours later. The only abnormality was a leucocytosis of $7{\cdot}4\text{-}14{\cdot}0\times10^9$/l. The symptoms subsided within 24 hours. *X*-ray films were re-examined and signs of left ventricular failure due to an allergic reaction to nitrofurantoin were considered the most probable diagnosis.

Three weeks later all symptoms had disappeared and she continued taking her previous medication. Chest *x*-ray films showed no pulmonary venous congestion but only traces of interstitial infiltration of the lungs. There was no rise in viral antibody titre between acute and convalescent sera.

Comment

Parotid pain has been reported in patients treated with antihypertensive drugs, such as bretylium, clonidine, and guanacline.[2] Parotid swelling is rare, but may occur in patients receiving iodide compounds, usually as contrast media.[3] Our patient presented a clinical picture which was indistinguishable from epidemic parotitis with bilateral parotid swelling and fever. Similar reactions have been reported with α-methyldopa,[2] oxyphenbutazone, and phenylbutazone,[4] but only in a few sporadic cases. Xerostomia, transient leukocytosis, eosinophilia, and increased serum amylase activity may occur with parotid swelling.[4] All these features, except for the eosinophilia, were present in our patient.

The mechanism of swelling of the salivary gland is poorly understood. Oedema and spasm of smooth muscle in the salivary gland might be responsible.[2] Transient eosinophilia with sialadenitis due to oxyphenbutazone may be a sign of an allergic reaction.[4] A four-hour delay before the onset of symptoms and the associated pulmonary signs in the present case might indicate a type III hypersensitivity.

Several cases of drug-induced "mumps" have possibly been diagnosed as epidemic parotitis, since this condition can be excluded only by the absence of a rise in specific antibody. Recurrent parotid swelling is also a manifestation of Sjögren's syndrome, but patients with this condition also have recurrent arthritis, keratoconjunctivitis sicca, and laboratory findings suggesting an autoimmune disease. Some patients with recurrent swelling of the parotid gland have no signs of extraglandular effusion or history of drug treatment.[5] These patients do not have a fever, which may help in the differential diagnosis of a drug reaction. Recurrent parotitis combined with a fever can indicate the possibility of a drug-induced reaction.

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