Acute post-streptococcal glomerulonephritis following ear piercing

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Summary

A case of post-streptococcal glomerulonephritis following ear-piercing is reported. It illustrates a rare but life-threatening complication of a cosmetic procedure carried out under unhygienic conditions.

KEY WORDS: ear, streptococcal infection, glomerulonephritis, arthritis, infections.

Introduction

Acute glomerulonephritis is a recognised consequence of streptococcal pharyngeal infection but may also occur as a result of skin infection. We report a case of classical poststreptococcal glomerulonephritis arising in a patient who developed streptococcal cutaneous infection and a septic arthritis after ear-piercing.

Case report

A 17-year-old youth was admitted to hospital with a 3-day history of fever and painful swelling of his left ankle. One month before admission he had pierced his left ear lobe with an unsterilized safety pin for cosmetic reasons, and developed a cutaneous infection at the puncture site. Two weeks later he noticed swelling of his face and hands and that his urine became dark. The swelling subsided after 48 hr but his urine remained discoloured.

On examination he looked toxic and had a temperature of 39.8°C. The left ear lobe was acutely inflamed and the left ankle joint was hot, tender and swollen with a tense effusion. There was no generalized oedema and his blood pressure was normal. The urine contained albumin +++ (Albustix-Ames) and microscopy of the urinary deposit revealed numerous red cells, white cells and cellular casts. The initial blood count showed a haemoglobin of 11.7

g/dl and a leucocytosis of 18.4×10^9 /litre of which 88% were neutrophils. Blood urea was elevated at 15.7 mmol/litre with a plasma creatinine of 122 μ mol/litre and a creatinine clearance of 67 ml/min. A throat swab grew normal respiratory flora and the urine was sterile. The C3 component of complement was reduced to less than 36 mg/dl (normal 104-161 mg/dl), antistreptolysin O titre was 1:800 and hepatitis B surface antigen and anti-nuclear factor were negative.

A diagnosis of septic arthritis and acute glomerulonephritis complicating a cutaneous infection of the ear lobe was made. Treatment was commenced with intravenous ampicillin and cloxacillin with a good clinical response. Beta-haemolytic streptococcus Lancefield Group A was cultured from the ear and from the joint aspirate but in view of the good clinical response, treatment with ampicillin was continued parenterally and subsequently changed to oral penicillin.

Renal biopsy (28 glomeruli per section) showed diffuse proliferative changes featuring all cell types with focal infiltration by neutrophil polymorphonuclear leucocytes. The main proliferative element was in the mesangial cells with increase in matrix. The vessels and tubules were essentially normal. The interstitium showed prominent focal infiltration by lymphocytes and polymorphs. Electron microscopy showed proliferation of mesangial cells with an increase in mesangial matrix which contained focal, dense deposits. Deposits were also present in capillary loops in both sub-epithelial and intra-membranous positions while epithelial cells showed focal fusion of foot processes. Immunological studies by immunoperoxidase techniques were essentially negative. The appearances were those of a resolving diffuse, proliferative glomerulonephritis with prominent mesangial cell proliferation, consistent with the recovery phase of an acute post-streptococcal glomerulonephritis.

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The septic arthritis and ear lobe infection resolved and over the course of 3 months renal function and C3 complement levels returned to normal with complete resolution of proteinuria and haematuria.

Discussion

Classical acute post-streptococcal glomerulonephritis is now a relatively uncommon condition in the United Kingdom (Leading article, 1979). Pharyngeal beta-haemolytic streptococcal infection was considered to be the most common precipitating cause, but it is well recognized that this condition may follow impetigo, infected burns, secondarily infected scratch marks and skin disease associated with pruritus such as scabies (Hersch, 1967).

Ear-piercing for cosmetic purposes has gained widespread acceptance in this country among women, and more recently among men. Whilst local skin infection occurs commonly after such procedures, even when performed by professional ear-piercers (Cockin, Finan and Powell, 1977), more

serious consequences may follow when self-mutilating procedures are carried out under unhygienic conditions as illustrated by this patient who developed glomerulonephritis and a life-threatening septic caemic illness.

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