in the series of 12 intussusceptions referred to above, appendicectomy was performed in five cases, with no deleterious effects on post-operative recovery. No reference has been found to intussusception precipitating acute appendicitis by obstructing the lumen of the appendix. In view of the outwardly innocuous appearance of the appendix in the case described, it is felt justified to urge appendicectomy in intussusception if the appendix shows the slightest abnormality. This should apply especially to children over the age of 2. Gross (1953) states that "mere engorgement and swelling of an appendix is not a sufficient indication for appendicectomy. . . . The cautious operator will not remove the appendix unless it is gangrenous and its vessels thrombosed." A plea is entered to modify this attitude.

I should like to thank Mr. A. Gourevitch for permission to publish this case.

P. GILROY BEVAN, M.B., F.R.C.S.,
Late Resident Surgical Officer,
the Children's Hospital, Birmingham.

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Fatal Agranulocytosis During Treatment with Amodiaquine

Amongst the drugs more recently introduced both chloroquine and amodiaquine ("camoquin") have established a good reputation for safety in the treatment of malaria. In this disease, however, they are usually given in short courses. The extension of their use over long periods to treat chronic diseases such as lupus erythematosus and other skin diseases in which photosensitivity is an important factor introduces new hazards.

In the treatment of malaria, side-effects which have been reported include mild and transient headache, visual disturbances, gastro-intestinal upsets, and pruritus. After prolonged medication for suppressive purposes dermatitis, bleaching of the hair, and diminution of T waves in some or all leads of the E.C.G. have been reported (Goodman and Gilman, 1955). Side-effects are reversible on withdrawal of the drugs and only rarely become serious enough to contra-indicate their use in this disorder.

In a recent review of the treatment with these drugs in lupus erythematosus (Dubois, 1956) two more potentially serious side-effects have been recorded—namely, thrombocytopenia and severe leucopenia—the former being encountered once and the latter three times in treating a series of 42 patients with chloroquine. In this series neither of these effects was encountered in treating 31 patients with amodiaquine. However, as these drugs are so closely allied chemically the following case of fatal agranulocytosis following treatment with amodiaquine seems worth reporting.

CASE HISTORY

A married woman aged 53 was admitted to hospital on September 26, 1956. Ten days previously she developed a sore throat and was presumed to have a quinsy. Three months earlier she had a rash on her face and forehead which appeared to be made worse by exposure to sunlight, and for this reason she was given amodiaquine. In all she received one tablet (200 mg.) of amodiaquine daily for nearly eight weeks, from July 24 to September 16. With the onset of the sore throat on September 16 the amodiaquine was stopped and "distaquaine penicillin," 300,000 units, was given systemically daily for three days and subsequently by mouth. The temperature, which was initially 102° F. (38.9° C.), never responded to treatment, and just before admission she became irrational, was unable to open her mouth, and was thought to have some neck rigidity. The presence of meningitis was suspected.

On admission she was obviously very ill, jaundiced, and toxaemic. Temperature was 99.8° F. (37.7° C.). With much difficulty the mouth was opened and a sloughing ulcer surrounded by a zone of erythema was detected on the right tonsil. The left tonsil was also inflamed. There was marked fetor of the breath. Neither the cervical lymph nodes nor the spleen were palpably enlarged. The other systems shared no significant abnormality.

Investigations.—September 26: Hb, 90% (13.3 g./100 ml.); C.I., 0.95; red count, 4,760,000 per c.mm.; white cells, 3,500 per c.mm. (lymphocytes 100%); E.S.R., 48 mm.; P.C.V., 40%; M.C.H. 28 μμg.; M.C.V. 84 cubic microns; M.C.H.C., 33.2%. *September 27*; Direct bilirubin, 1.2 g./100 ml.; indirect bilirubin, 1 g./100 ml.; total bilirubin, 2.2 g./100 ml.; alkaline phosphatase, 22.3 K.A. units; thymol turbidity, 1 unit; zinc sulphate turbidity, 1.5 units; total protein, 5.15 g./100 ml. (albumin 3.6 g., globulin 1.55 g.); albumin: globulin ratio 2.38:1. Widal reaction negative in all dilutions of patient's serum against the following: *Salmonella paratyphi B* O and H, *Salmonella typhi* O and H, *Brucella abortus, Brucella melitensis,* and non-specific *Salmonella* H. Urine: reaction acid; albumin trace; sugar nil. Microscopical examination—light deposit of amorphous urates only. No growth on culture. A negative test for quinine derivatives. White count 600 per c.mm. *September 28*: Sternal marrow showed a very marked hypoplasia of the granular series; the red blood cells showed some anisocytosis and polychromasia; erythropoiesis did not appear to be much affected; myeloid-erythroid ratio 1:4. Right tonsil: culture—large number of Gram-positive cocci seen. Left tonsil: culture—several epithelial cells and a number of Vincent's organisms present. A few colonies of *Staph. albus* and *Str. viridans* were grown. White cells, 450 per c.mm. (lymphocytes 99%, large monos. 1%). *September 29*: Paul-Bunnell, unabsorbed weak positive at 1:20, absorbed weak positive at 1:10. White cells, 350 per c.mm.

The patient was given one million units of soluble penicillin six-hourly from the time of admission, and in addition tab. prednisone, 10 mg. four times a day. The following day she was also given pyridoxine, 200 mg. daily. This was later changed to 50 mg. twice daily intravenously and 100 mg. daily orally. The patient failed to respond to therapy; the temperature remained elevated and the white count low throughout. She went steadily downhill and eventually died on September 30 at 6.50 a.m.

Post-mortem Findings.—At necropsy the outstanding abnormal findings were as follows. The brain showed some congestion and much oedema, but the central nervous system was otherwise normal. The fauces and tonsils were ulcerated and there was slight erosion of the lower end of the oesophagus. The large bowel as far as the splenic flexure was thickened owing to oedema. The lungs were congested. Small haemorrhagic areas resembling infarcts were visible. Both lower lobes were dark and oedematous, but there was no pneumonic consolidation. The pericardial sac contained 1½ oz. (45 ml.) of clear icteric fluid. The heart was dilated and the cut surface of the myocardium revealed diffuse fine fibrosis. The kidneys were of normal size, but early arteriosclerotic changes were visible. The liver was enlarged and had a nutmeg appearance. The spleen was about double normal size. The lymph nodes in the porta hepatis and mesentery were enlarged. The bone marrow appeared normal.

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LOUIS GLICK, M.D., M.R.C.P.,
Physician, Royal Halifax Infirmary.

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