Medical Memoranda

Thiopentone Injection into an Aberrant Artery

The following case is reported because of its unusual character and as a warning to anaesthetists to be ever alert against the possibility of inadvertent intra-arterial injection.

CASE REPORT

The patient, a woman aged 35, was admitted for dilatation and curettage. A venipuncture was made into what appeared to be a vein in the middle of the proximal part of the ventral aspect of the right forearm (at the point marked X in Fig. 1). About 2 ml. of 5% sodium thio-

FIG. 1.—Photograph of the patient's forearm. The black line shows the course of the aberrant vessel.

pentone had been injected when the patient complained of burning pain passing down the arm to the hand. Injection was stopped and the "vein" palpated; it was found that, proximal and distal to the point of injection, along the line of the "vein," pulsation could be felt. The needle was kept *in situ* and 5 ml. of 2% procaine slowly injected through it. On removal of the needle after injecting the procaine, blood issued from the puncture in little intermittent spurts. The pulse in the punctured artery was observed for some minutes; it remained unaltered. Anaesthesia was restarted and the operation carried out uneventfully. The patient was kept under careful observation for a few days before discharge; the colour, temperature, and pulses in the right arm remained unaltered.

An angiogram was taken two days later (Fig. 2). It showed the aberrant vessel arising at the bifurcation of

FIG. 2.—Angiogram of right forearm

the brachial artery and pursuing its course through the forearm to the ulnar border of the wrist. It will also be seen that the brachial artery bifurcates above the level of the elbow joint.

COMMENT

The vessel injected in this case was almost certainly an aberrant ulnar artery. Gray (1935a) states that when the ulnar artery arises above the elbow "it is usually superficial to the flexor muscles in the forearm, lying commonly beneath the fascia, more rarely between the fascia and the skin." In the present case the vessel was certainly subcutaneous. Macintosh and Heyworth (1943) report two cases of intra-arterial injection of thiopentone, in one of which the injection was made into an aberrant ulnar artery.

They also quote a further case in which thiopentone was injected into an aberrant ulnar artery (Van der Post, 1942).

Other arteries in the arm may occasionally be mistaken for veins. Thus, according to Gray (1935b), the radial artery occasionally takes a superficial course through the forearm. Again, Hewer (1944) states that sometimes "the brachial artery takes an abnormally superficial course through the antecubital fossa."

It is recommended that, in order to avoid puncturing a superficially placed artery in mistake for a vein, the vessel to be injected should always be palpated *before* the tourniquet is applied to the limb.

I am grateful to the staff of Hope Hospital, Salford, for their co-operation.

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Presternal Oedema in Mumps

The occurrence of swelling over the manubrium sterni in cases of mumps does not appear to be well known in this country, and references to it in the literature are scanty. Radin (1918) writes: "There are a few cases in which mumps expresses itself by a general swelling of neck and chest, like Hodgkin's disease, a doughy gelatinous mass. . . . There is no tenderness. The tissues are soft and elastic and are easily agitated. . . . Rarer symptoms . . . were . . . dysphonia." He presents evidence of thymus enlargement in one case with presteral oedema. Barker (1943) reported three such cases from an outbreak involving 438 persons. Two of these three had dysphagia, and in one the epiglottis and the right wall of the hypopharynx were seen to be swollen. Rappaport (1943) described two cases, both boys and both with mumps of normal severity. In an outbreak of mumps involving 502 patients at Fort Benning, Georgia (Gellis and Peters, 1944), 30 cases developed presteral oedema, two of them with dysphagia also. Twenty-five had one or both submaxillary glands swollen at the time the presteral swelling became evident, whereas the other five had parotid mumps only.

Among 263 cases of mumps encountered in a semi-rural area of Gloucestershire presteral oedema was seen five times, twice in males aged 4 and 8, and three times in females aged 4, 7, and 41. The circumstances of the study make it likely that the true incidence is far higher than these figures suggest, and that presteral oedema is as common a feature as swelling of the gonads. In our cases the oedematous area varied in size, sometimes attaining 3 in. (7.5 cm.) in diameter. The skin covering it was of a normal colour, and in at least one case pitting definitely occurred. Gellis and Peters reported that the skin became a dull red over the swelling in 3 of the 30 cases. The degree of presteral swelling was unrelated to the severity of the glandular involvement.

In describing his first case Barker mentioned that the oedema seemed to be more gelatinous than ordinary oedema and did not pit well on pressure. Gellis and Peters state that in all their cases the oedematous tissues pitted easily, and they demonstrated the fact by lateral soft-tissue x-ray films. Probably the swelling is due to obstruction of the lymphatic drainage, but it is a little difficult to see how this is brought about mechanically in those cases in which the parotids only are involved.

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