PRELIMINARY TRIAL OF A NEW HAEMOSTATIC

OCTAPRESSIN-SANDOZ*

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UNDER the best conditions hypotensive anaesthesia can be relied on as a safe and valuable procedure. It is, however, emphasized, as by Enderby (1961) and Davies (1961), how important is the post-operative care of the patient. This demands much time from skilled nursing staff. When these conditions cannot be met it is doubtful if the technique should be used, especially for operations not necessary for the life or health of the patient.

With halothane anaesthesia, the use of adrenaline is contra-indicated on account of the risk of cardiac arrhythmia, as discussed by Mushin and Rosen (1962), and a new local haemostatic agent therefore deserves attention.

Substitution of amino-acids in the polypeptide chain of the natural posterior pituitary hormones produces substances with varying physiological actions. When the tyrosine in lysine-vasopressin is replaced by phenylalanine, an agent is formed which retains the vasoconstrictor power but has fewer undesirable side-effects. This phenylalanine-lysine-vasopressin (PLV2) is manufactured in Switzerland as Octapressin-Sandoz, but is not yet commercially available in Great Britain.

The chief dangers of vasopressin are coronary constriction and anti-diuresis. It is known that with vasopressin these two effects correspond to one another; experimental work by Berde (1961) and Berde, Weidmann, and Cerletti (1961) shows that with PLV2 there is a shift in favour of vasoconstriction, and in man Guhl (1961) found that the vasoconstrictor effect is approximately seventy times greater than the anti-diuretic effect when compared with vasopressin. The effect on the blood pressure is about the same as that of vasopressin. Serious, and in four cases fatal, coronary constriction occurred with vasopressin only when ten or more units were given. The coronary constrictor effect of PLV2 is three or four times less than that of vasopressin.

Klingenström and Westermarck (1963) compared the local effect in man of PLV2 with that of adrenaline. They found the same ischaemia and prolongation of local anaesthesia, but PLV2 did not produce the cyanosis and tissue damage which they found after adrenaline. Hügin (1962) found no effect on the heart during intravenous injections of PLV2 in 31 subjects during anaesthesia with cyclopropane, nitrous oxide, Halothane, or trichlorethylene. Missura and Weder (1962) used PLV2 in fifty adult tonsillectomies without complication, and considered there was less risk of secondary haemorrhage than after adrenaline. Tsakiris and Bühlmann (1963) found no evidence of coronary constriction during 45 experimental intravenous injections in man.

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Hochuli (1962), who used PLV2 in 324 gynaecological operations and 565 episiotomies, noted no electrocardiogram changes, no reactive haemorrhages, and only slight blood pressure changes.

Present Investigations

In considering the use of PLV2 in operations on the eyelids and lacrimal apparatus, the question arose whether it would be helpful to increase the concentration above that which had generally been used, in view of the small amount of fluid which could be injected, or whether this might have an adverse effect on healing. Starting therefore with a solution of 5 Pressor Units in 30 ml. saline, I increased to 5 PUs in 10 ml., never using a total of more than 2.5 PUs; this dose would appear perfectly safe provided patients with heart disease are excluded.

This small series of 32 eyes in 30 cases, which is presented in the hope that further trials will be undertaken, consists of seventeen dacryocystorhinostomies, three operations for ptosis, one for reconstruction of a lacrimal canaliculus, nine on the eyelids (Table), and two intubations of lacrimal passages.

TABLE
PARTICULARS OF 32 CASES

Operation	Age (yrs)	Blood Pressure	Dose of PLV2 (Pressor Units)
Ptosis	7		0.5
Ectropion	87	180/90	0.125
Cyst of caruncle	78	200/100	0.25
Dacryocystorhinostomy	49	140/88	1.5
Dacryocystorhinostomy	64	130/90	2.0
Dacryocystorhinostomy { Right	57	150/90	2.5
Left			2.0
Lacrimal cyst	36	140/80	0.5
Dacryocystorhinostomy	72	210/110	1.5
Lid tumour	74	150/90	1.0
Dacryocystorhinostomy { Right	58	160/100	0.5
Left			0.6
Dacryocystorhinostomy	27	130/50	2.5
Dacryocystorhinostomy	65	160/90	0.5
Dacryocystorhinostomy	6		0.5
Dacryocystorhinostomy	52	170/95	1.0
Canaliculus dissection	62	160/80	1.0
Dacryocystorhinostomy	38	120/60	1.0
Dacryocystorhinostomy	66	120/80	0.5
Dacryocystorhinostomy	60	170/90	1.5
Ectropion	70	160/80	0.5
Ectropion	66	120/80	0.5
Dacryocystorhinostomy	69	180/90	1.5
Dacryocystorhinostomy	70	160/90	1.5
Rodent ulcer of lid	52	140/80	1.5
Rodent ulcer of nose	70	160/75	1.0
Ptosis	8		1.0
Ptosis	9		0.5
Lacrimal intubation	71	180/90	1.5
Paralytic ectropion	89	140/80	1.0
Lacrimal intubation	52	130/70	1.5
Dacryocystorhinostomy	37	140/70	1.5

Superficial bleeding is well controlled, as is that from the nasal mucosa, better than that deep in the lacrimal fossa; a dry field is not obtained for dacryocystorhinostomy,

but the haemostatic action is helpful. My impression is that the effect is more satisfactory in the eyelid. No significant rises in blood pressure were found and no cardiac irregularities. There was no delay in healing.

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