results of two experiments in which the administration of isoprenaline (0·5–10 μg) caused splenic vasodilatation.

The peptides angiotensin II, oxytocin and vasopressin were administered in seven experiments. Angiotensin II (0·05–25 μg) and vasopressin (0·5–2·0 i.u.) always caused profound increases in splenic vascular resistance. However, the administration of oxytocin (0·5–5·0 i.u.) caused vasodilatation in five of the seven experiments with no effect on the splenic vascular bed in the remaining two. No consistent changes in spleen volume were observed.

It appears that the vascular smooth muscle of the human spleen has a classical α- and β-adrenoceptor spectrum similar to that observed in many species. The very small changes we have observed in spleen volume (less than 5% total volume) provide direct evidence of the minor capacitative function of the human spleen.

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The human isolated cervix: a study of its spontaneous motility and responsiveness to drugs

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The human cervix has been said to consist mainly of fibrous tissue, and consequently doubt has arisen about whether nor not it possesses muscular contractility.

Hughesden (1952) showed muscular elements in the cervix, particularly in the outer layers, and he suggested that the cervix could show contractility. The work of Schild, Fitzpatrick & Nixon (1951) supports this as they showed that the cervix *in vivo* could exhibit contractions independent of the motility of the remainder of the uterus.

However, on the basis of histological studies and limited isolated tissue experiments, Danforth (1954) could show little spontaneous contractility or response to drugs. In order to investigate this further, strips of muscle from the outer layer of non-gravid cervices were suspended in Krebs solution at 37° C bubbled with 5% CO_2 in oxygen. Almost all of the strips studied exhibited spontaneous activity and response to drugs, under both isotonic and isometric conditions. Spontaneous activity was not, however, a prerequisite for drug response as those strips that did not exhibit motility could usually be stimulated to do so on application of a suitable drug. Addition of prostaglandin E_2 (0·025–0·5 μg/ml), prostaglandin $F_{2\alpha}$ (0·5–2·0 μg/ml) and oxytocin (1·0–10·0 mU/ml) to the bath caused changes in tone, amplitude and frequency of contraction, although in some cases not all of the three parameters altered.

Prostaglandin E_2 inhibited and oxytocin stimulated the activity of the strips. The response to prostaglandin $F_{2\alpha}$ was more variable but this did not depend upon the dose.

The observations that the cervical muscle can exhibit marked spontaneous contractility and respond to drugs suggests that it may possibly play a more active role in gestation and parturition than has previously been assumed.

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A method for studying spinal pharmacology in man

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Using human volunteers for pharmacological studies of spinal reflexes has two possible advantages over animal experiments: (*a*) the subject is conscious, co-operative and has an intact nervous system, and (*b*) the results of such studies are immediately relevant to therapy of spinal diseases. Techniques for studying the excitability of α- and γ-motoneurones in man have been described in detail (Matthews, 1970), but they have been little used for pharmacological work. Evidence from animal experiments suggests that bulbospinal noradrenergic pathways in the mammalian spinal cord (Dahlström & Fuxe, 1965) may be important in the regulation of fusimotor neurone discharge (Ellaway & Pascoe, 1968). In order to extend these observations to normal human volunteers a technique has been devised which measures the following:

1. The isometric tension of the gastrocnemius-soleus muscle produced reflexly by standard taps to the Achilles tendon, measured with a 10 kg strain gauge.

2. The maximum amplitude of the H reflex recorded from the muscle with skin electrodes by stimulating the Ia afferent fibres in the medial popliteal nerve. This reflex by-passes the muscle spindles and tests the excitability of the α-motoneurone pool (Matthews, 1970).

3. The isometric tension produced by a stimulus to the medial popliteal nerve at an intensity at which the H reflex is completely blocked by antidromic conduction in α-motor fibres. This procedure tests transmission at the neuromuscular junction.

4. The tension produced by a stimulus applied to the belly of the muscle through skin electrodes, thus testing the integrity of the contractile mechanism of the muscle.

These measures allow separation of central and peripheral effects of a drug. In addition, the action of a drug on fusimotor neurones can be distinguished from an action on α-motoneurones, for an alteration in the amplitude of the tendon jerk without a change in the H reflex suggests an action on the fusimotor system.

Preliminary results of two double-blind balanced randomized studies using a saline control in six male volunteers suggest that adrenergic mechanisms are concerned in the regulation of tendon jerk reflexes. Results were calculated as a percentage of the preinjection values, and the significance of the mean differences between drug and saline was tested. Thymoxamine, a specific α-adrenoceptor blocking drug (Birmingham, Akubue & Szolcsanyi, 1967) produced a marked reduction in the amplitude of the tendon jerk (mean difference= -66% with a dose of 0·1 mg/kg