CIRCUMSTANCES IN WHICH MURMURS MAY APPEAR IN ADULTS.

Physiological. They become louder and harsher in all the circumstances a murmur appears. At first soft and blowing it may persist for many minutes. Valsalva manoeuvre (Sharpey-Shafer, 1955). Breath holding, especially if part of a stormy induction of anaesthesia, the age of sixteen that they must be regarded as being physiological. If they have no other cause they will fade soon after the induction of anaesthesia. Large doses of barbiturates or propanidid will cause both sounds and murmurs to fade and even to disappear for several minutes.

Low central venous pressure. A murmur may fade following further trauma or loss of blood. The weakened normal sounds and a low central venous pressure will reveal the true situation. If the circulatory volume and central venous pressure are restored the murmur will reappear and the sounds become louder. But the condition of the patient, although improved, remains precarious unless further transfusion of an appropriate fluid is given.

Weakened myocardial contraction. The transmitted heart sounds are weak and rapid. Should the myocardial function improve a murmur may appear.

Positive pressure ventilation, especially with high concentrations of halothane or in the presence of an open thorax, delays the appearance of the murmurs.

Murmurs may be heard in the neck in two circumstances not connected with any of the above:

(a) Cardiac or haemic murmurs radiated into the neck.
(b) Atheroma of the great vessels of the neck.

REFERENCES


VASCULAR MURMURS IN THE NECK ASSOCIATED WITH GENERAL ANAESTHESIA

Sir,—Many anaesthetists do not realize that sounds may be heard over the arteries of the neck, or that these sounds may alter, thus providing information about the state of the circulation.

If a stethoscope, with a bell-type orifice of not more than 2 centimetres diameter, is placed over the carotid or subclavian arteries, transmitted normal heart sounds will be heard. (Breath sounds are not heard so loudly over the carotid arteries if an endotracheal tube is being used.) They are, however, clearer over the subclavian arteries.

The most obvious alteration that occurs is a diminution in the intensity of the transmitted sounds as the cardiac output and blood pressure fall. But in certain circumstances a murmur appears. At first soft and blowing it becomes louder and harsher until one or both sounds are obscured. The following factors favour the appearance of the murmurs:

(a) Apprehension. Murmurs may be detected in anxious patients prior to anaesthesia. They may reveal the true situation. If the circulatory volume and central venous pressure are restored the murmur will reappear.

(b) Breath holding. It has been shown that sympathetic induced vasoconstriction occurs as a response to the Valsalva manoeuvre (Sharpey-Shafer, 1955). Breath holding, especially if part of a stormy induction of anaesthesia, often leads to the appearance of murmurs that may persist for many minutes.

(c) Children. These murmurs are so common under the age of sixteen that they must be regarded as being physiological. They become louder and harsher in all the circumstances in which murmurs may appear in adults.

(d) Surgical stimuli and loss of blood may separately or together produce murmurs. Their appearance may precede or accompany development of shock.

(e) Reduced venous return. During Caesarean sections the murmurs are common during the period preceding the delivery of the baby. If the patient is a fit woman, and there is no extensive loss of blood, the murmurs will fade following the reduction of intra-abdominal pressure and resumption of spontaneous respiration.

(f) Murmurs may also appear following removal of tourniquets, especially from the legs, or after lowering the legs from the lithotomy position. A similar mechanism involving constriction of the great arteries (Scurr and Feldman, 1970) in response to reduced venous return probably causes each of these effects.

The murmurs may disappear in the following circumstances:

(a) Induction of intravenous anaesthesia. Large doses of barbiturates or propanidid will cause both sounds and murmurs to fade and even to disappear for several minutes.

(b) Low central venous pressure. A murmur may fade following further trauma or loss of blood. The weakened normal sounds and a low central venous pressure will reveal the true situation. If the circulatory volume and central venous pressure are restored the murmur will reappear and the sounds become louder. But the condition of the patient, although improved, remains precarious unless further transfusion of an appropriate fluid is given.

(c) Weakened myocardial contraction. The transmitted heart sounds are weak and rapid. Should the myocardial function improve a murmur may appear.

(d) Positive pressure ventilation, especially with high concentrations of halothane or in the presence of an open thorax, delays the appearance of the murmurs.

Murmurs may be heard in the neck in two circumstances not connected with any of the above:

(a) Cardiac or haemic murmurs radiated into the neck.
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REFERENCES


NOTES FOR THE GUIDANCE OF RESEARCH WORKERS ON THE USE OF LABORATORY ANIMALS

Sir,—In consultation with veterinary organizations and other bodies concerned with the use of animals in research, the College has recently published Notes for the Guidance of Research Workers on the Use of Laboratory Animals. It is hoped that these may be of help to people embarking on such research, particularly in the medical and dental fields.

A reprint of the Notes may be obtained from the Secretary of the College.

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