Roentgen Television Study of Cardiac Calcifications

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In heart surgery of mitral and aortic stenosis the presence of calcifications in the ostial rings and valves makes the management more difficult. The knowledge of the presence of calcifications preoperatively is therefore important.

Our methods for their visualization used up to now have their advantages and disadvantages. Screening reveals the characteristic movements of the deposits but requires full adaptation of the eye. Heavily exposed films, with very short exposures, can demonstrate the calcifications in different views but they may be overlooked if poor technic is used, or become unsharp in frequent heart pulsations. Tomography at small angles and short exposure time (Lindblom 1955) reveals even small calcifications. The method is time-consuming compared with conventional heart radiography and being performed in oblique prone position, it is often too tiring for many heart patients.

Since the introduction of the image intensifier with television the diagnostic situation is simpler. The apparatus used for the present study is a Siemens image intensifier and a Fernseh Orthicon television camera fitted with a conventional receiver. This procedure includes the advantages but not the disadvantages of the above methods. The patient may be examined in sitting or lying position in daylight. The time needed for the examination is about the same as for ordinary screening.

The calcifications are visible with great evidence on the television screen (figs. 1 and 2). For study of the mitral ostium, frontal and lateral views are sufficient; for the aortic os-

Figure 1
tium, slight rotation to the left and a lateral position are required. The movements of the calcifications, not only identify and differentiate them from calcifications of the lungs and ribs, but also facilitate their recognition when they are small or of poor density. In questionable cases the radial pulse indicates the rate of the movements; difficulties may occur in a slow, perpetual arrhythmia. Differences in the extent of the movements of the calcified area may suggest localization to the ring, or to the valves.

In addition, calcifications of the coronary arteries are also easily observed, due to their movements. The left artery is generally mostly affected and the changes are visible in slight rotation to the left and in the lateral view (cf. fig. 2).

With some experience it should be possible also to exclude cardiac calcifications of clinical importance by means of the method.

Summary

A study on roentgen television of cardiac calcifications is reported.

Reference

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