The medial papillary complex

Sir,

Recently, a comprehensive study has been published by Wenink (1977) in the *British Heart Journal* (39, 1012-1018) on what is usually known as the papillary muscle of the conus. In this paper, the author misquotes our work (Quero-Jiménez and Pérez Martínez, 1974) in which we make it clear that the papillary muscle of the conus is not invariably a landmark of the septal band. We wrote: 'The papillary muscle of the conus, *usually* situated on the posterior division of the superior end of the septal band. . . .' The adverb 'usually' was used to indicate that there are cases in which the papillary muscle of the conus does not occur in the usual situation on the posterior division of the superior end of the septal band. We continue 'Nevertheless, in some cases, chordae tendineae similar to the papillary muscle of the conus may be found on the conal septum or certain muscular portions of it'. This sentence clearly illustrates that there are cases in which the septal band cannot be identified by means of the so-called papillary muscle of the conus because there is no such papillary muscle, and the chordae tendineae coming from the commissure between the septal and anterior tricuspid leaflets (which could be considered as an equivalent of the papillary muscle of the conus) may be situated outside the septal band: on the conal septum or certain muscular portions of it. In subsequent paragraphs, we stressed the possibility of anomalous attachments of short chordae tendineae, similar to the papillary muscle of the conus, to muscle bundles which may be mistaken for the septal band (a term which in our paper was used synonymously with trabecula septomarginalis).

We cannot accept as valid the way in which our paper has been quoted by Dr Wenink, who could have quoted us more accurately if he had written 'Consequently, as has been pointed out by Quero-Jiménez and Pérez Martínez (1974) the use of the medial papillary complex as a landmark for the designation of the "septal band" is a rule which has exceptions'.

For some time we have been aware of the fact that the only constant feature of the papillary muscle of the conus, which is very often reduced to some

chordae tendineae, is that it corresponds to the tensor apparatus of the commissure between the anterior and septal leaflets. Its site of insertion on the myocardium will depend on the area of the muscular tissue which underlies this commissure and from which, by a process of undermining, the corresponding portion of the tensor apparatus of the tricuspid valve is formed. In most normal hearts this area of the myocardium happens to be the posterior division of the superior end of the 'septal band' (trabecula septomarginalis). Nevertheless, in some congenital heart lesions involving an alteration in the position of the tricuspid valve relative to the ventricular septum (overriding tricuspid valve, double outlet right ventricle, Fallot's tetralogy, certain types of transposition of the great arteries, etc) there is a positional alteration of the tensor apparatus corresponding to the commissure between the septal and anterior tricuspid leaflets (papillary muscle of the conus). The reason is obvious: the underlying muscular tissue, from which this portion of the tricuspid tensor apparatus is developed, is no longer the right aspect of the anterior part of the ventricular septum, which corresponds to the posterior division of the superior end of the trabecular septomarginalis.

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Reference

Quero-Jiménez, M., and Pérez Martínez, V. (1974). Uncommon conal pathology in complete dextrotransposition of the great arteries with ventricular septal defect. *Chest*, 66, 411-417.

This letter was shown to Dr Wenink who replies as follows:

Sir,

The letter by Dr Quero-Jiménez deals with a vital aspect of my paper on the medial papillary complex. A striking feature of this complex is its variability. This may appear from my description in

normal hearts, but is even more striking in congenitally malformed hearts. In our collection many cases of transposition, with or without ventricular septal defect, show small papillary muscles both on the infundibular septum (which may be deviated) and on the trabecula septomarginalis. In addition, an abnormal myocardial band may be present, which cannot be called either infundibular septum or trabecula septomarginalis, which holds tendinous chords for the anterior and/or septal tricuspid leaflet. Both from these as yet unpublished observations and from the data published in 1977 it appears that malformations of the right ventricular outflow tract will influence the detailed morphology of the medial papillary complex. The reverse does not seem likely. These observations are consistent with those described by Dr Quero-Jiménez in the last paragraph of his letter. He states, and very well so, that in most normal hearts the area of myocardium which underlies the site of the future commissure happens to be the posterior division of the superior end of the trabecula septomarginalis. I also agree with Dr Quero-Jiménez when he says that a positional

alteration of the tensor apparatus will be encountered in many congenital malformations.

However, the paper by Drs Quero-Jiménez and Pérez Martínez (1974) does not describe normal hearts but deals with 'uncommon conal pathology', which should have prevented the authors from stating that 'the papillary muscle of the conus usually situated on the posterior division of the superior end of the septal band was considered a useful and reliable structure in locating the septal band'. To me, the variability of the medial papillary complex in normal hearts, and its further extravagances in congenital malformations, do not form a sound basis on which to ascribe any significance to its location. Even when paraphrased as in their letter this statement is unfortunate. I would certainly not speak of a 'rule', even if it is admitted that there are exceptions.

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