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LETTERS TO THE EDITOR

- *The British Heart Journal welcomes letters commenting on papers that it has published within the past six months.*
- *All letters must be typed with double spacing and signed by all authors.*
- *No letter should be more than 600 words.*
- *In general, no letter should contain more than six references (also typed with double spacing).*

Balloon dilatation of supravalvar pulmonary stenosis after arterial switch procedure for complete transposition

SIR,—I read with interest the article by Saxena *et al* on balloon dilatation of supravalvar pulmonary stenosis that developed after previous anatomical correction of transposition of the great arteries.[1] They described the results of eight balloon dilatations in five children. In none of the dilatations was there any improvement in the pressure gradient across the area of obstruction nor was there any significant angiographic change. Yet they went on to apply balloon angioplasty in five patients and in addition repeated the procedure in three children. As they state, the residual obstruction seems to be related to shrinkage and retraction of the pericardial patch used in the enlargement of neopulmonary artery at the time of initial surgery. There is no theoretical basis why such lesions would respond to balloon dilatation. Zeevi *et al's* observations were also similar when there was diffuse narrowing of the pulmonary artery.[2] I have also used balloon dilatation of supravalvar pulmonary stenosis that developed after a previous arterial switch procedure.[3] There was excellent haemodynamic (fig 1) and angiographic (fig 2) improvement; however, the obstruction in my case was discrete (fig 1A) and there is theoretical reason for balloon dilatation to be effective discrete obstructions such as this.

I urge Saxena *et al* and others not to use balloon angioplasty if obstructive lesions of the pulmonary artery in children are diffuse, those described by Saxena and Zeevi.[1] Discrete lesions, however, can be dilated.

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1 Saxena A, Fong LV, Ogilvie BC, Keeton BR. Use of balloon dilatation to treat supravalvar pulmonary stenosis developing after anatomic correction for complete transposition. *Br Heart J* 1990;64:151–5.
2 Zeevi B, Keane JF, Perry SB, Lock JE. Balloon dilatation of postoperative right ventricular outflow obstructions. *J Am Coll Cardiol* 1989;14:401–8.
3 Rao PS. Balloon angioplasty and valvuloplasty in infants, children and adolescents. *Curr Probl Cardiol* 1989;14:417–500.

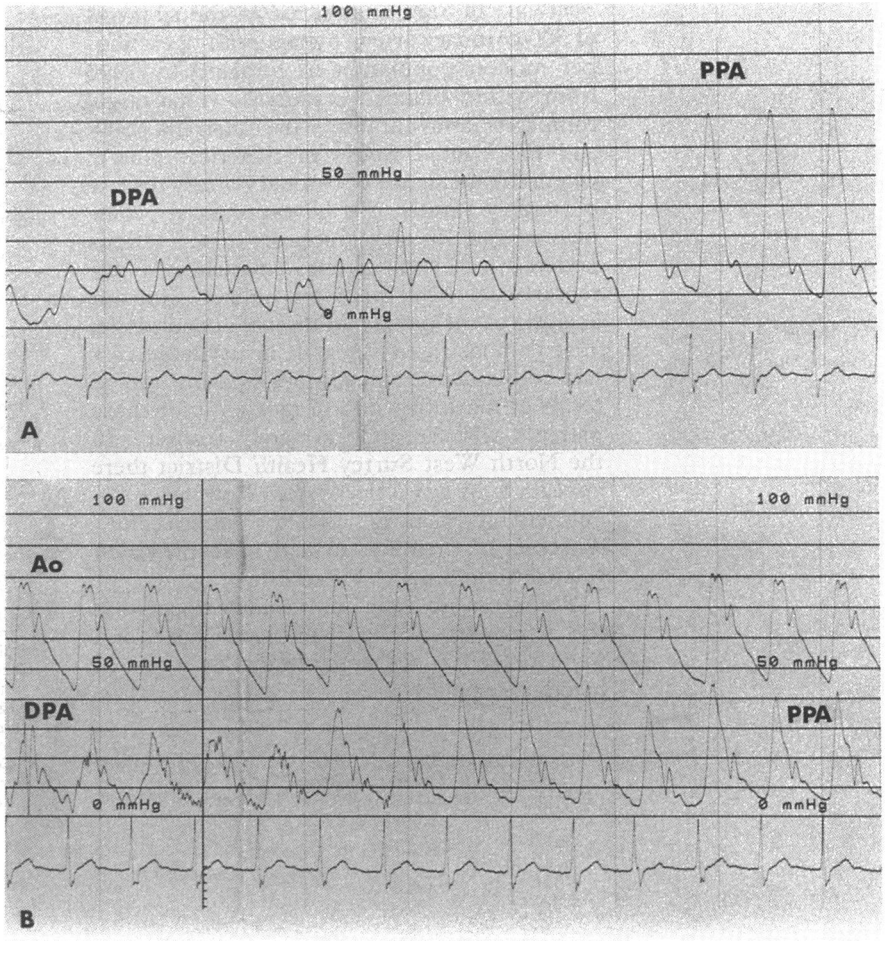

Figure 1 Pressure pullback tracings across the supravalvar stenosis showing a significant pressure gradient (A) that diminished considerably after balloon dilatation (B). Aortic pressure is also shown in B. Ao, aorta; DPA, distal pulmonary artery; PPA, proximal pulmonary artery. Reproduced with permission from the author and publisher: Rao PS. Curr Probl Cardiol 1989;14:417–500.

This letter was shown to the authors, who reply as follows:

SIR,—Dr Rao has misinterpreted the nature of the stenotic lesions of the supravalvar pulmonary area that we attempted to dilate after the arterial switch procedure. The angiographic appearances of the cases,[1] showed a stenotic segment that seemed to be localised to a short segment in the proximal pulmonary artery which was considerably narrower than the distal pulmonary arterial segment. The distal pulmonary artery may have looked smaller than expected, but it was comparable to the more distal pulmonary arterial tree, except where a further localised stenosis occurred. It was this short segment of proximal supravalvar pulmonary stenosis or discrete bifurcation stenosis that responded poorly to balloon dilatation. The segments appeared amenable to balloon dilatation, as judged by angiography, and did not assume the appearance of diffuse narrowing that Dr Rao has described. It was concluded that these short localised segments that responded poorly to balloon dilatation should not be described as a discrete stenosis, as their appearance suggested, because they responded like short segments with hypoplasia with both an intrinsic and post-surgical aetiology. We agree with Dr Rao that diffuse hypoplasia would not be amenable to balloon dilatation. Progress in developing effective treatment for such stenotic lesions comes not only from knowledge of successful trials, but also from unsuccessful attempts, as anticipated by the use of endovascular stents for congenital heart disease.[2]

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1 Saxena A, Fong LV, Ogilvie BC, Keeton BR. Use of balloon dilatation to treat supravalvar pulmonary stenosis developing after anatomical correction for complete transposition. *Br Heart J* 1990;64:151–5.
2 O'Laughlin MP, Perry SB, Lock JE, Mullins CE. Use of endovascular stents in congenital heart disease. *Circulation* 1991;83:1923–39.

Balloon atrial septostomy via the umbilical vein

SIR,—We wish to point out that the "practicability of cannulation via the umbilical vein"[1] was first reported by us as an alternative to the femoral route for balloon atrial septostomy over two decades ago.[2] Several centres have adopted the method and have confirmed the usefulness and advantages of this approach.[3–5] One report was published in the *British Heart Journal* in 1974[6] with similar conclusions to ours. The incorporation of echocardiographic imaging makes the umbilical route even more attractive. We highlighted the fact that transumbilical sep-