Letters to the Editor

Pacemaker implantation rate

Faber et al. reported on a decrease in pacemaker implantation rate from 17% in their first 30 patients to 7% in the following 61 cases[8]. In our hands, permanent high-grade atrioventricular block decreased from 20% in the initial 30 patients to 9% in the following 119 cases.

Because similar reductions in atrioventricular conduction disturbances were achieved with (Faber et al.[8]) and without the use of intra-procedural myocardial contrast echocardiography (our group), the conclusion — suggested by Faber et al. — that myocardial contrast echocardiography was the most important point for the reduction in permanent high-grade AV block seems to be overstated.

With regard to our data, analysed in 149 patients up to now, the risk of a persistent total atrioventricular block is correlated to patient age, operator experience and the degree of gradient reduction intended. A permanent atrioventricular block rate of only 2% was observed in a subgroup of 44 patients in whom we accepted a persistent post-extrasystolic gradient of ≥50 mmHg. Seven months after TASH in these patients the average decrease in gradient was 74% at rest (66 ± 43 vs 17 ± 21 mmHg, P=0.001) and 62% post-extrasystolic (156 ± 53 vs 60 ± 42 mmHg, P=0.001).

The pacemaker implantation rate is influenced more by the implantation strategy as by the TASH procedure itself. In 1995, on performing the first catheter interventional therapy for hypertrophic obstructive cardiomyopathy in Germany, we decided prospectively to implant dual-chamber pacemakers in all patients with a high degree atrioventricular block 48 h after intervention.

This decision, based on the results of rhythmological studies[9], was made in order to ensure that patient care was as safe as possible. Interestingly, in 1997 Faber et al. presented a ‘scoring system’, based on a retrospective analysis of 33 patients that confirmed a lack of ‘normal sinus rhythm 48 h after intervention’ as the most significant parameter for a permanent atrioventricular block[13]. Furthermore, although late sudden total atrioventricular block was observed by Faber’s group (23 months after TASH, data presented at the XXIst Congress of the European Society of Cardiology in Barcelona, August 1999) in appropriate


A reply

In patients with hypertrophic cardiomyopathy and substantial outflow obstruction the indication for transcatheter ablation of septal hypertrophy (TASH) depends on the presence of severe symptoms despite medical treatment[3]. We agree that (as Maron points out[8]) the TASH procedure should be strictly confined to those patients who meet the traditional, selection criteria for surgery. Therefore it is quite clear that asymptomatic (or mildly asymptomatic) patients, even if they have large basal gradients, are usually not considered candidates for TASH[3]. However, there is an interesting debate whether a marked outflow gradient at rest (≥50 mmHg) is a necessary precondition for interventional therapy in patients with severe disabling symptoms unresponsive to medical therapy[9].

The 50 patients enrolled into our study had a mean resting gradient of 55 ± 43 mmHg and that compares favourably to the mean resting gradient of 48 ± 42 mmHg reported by Schulte et al. in a large surgical survey including 466 patients[8]. We, as did Schulte et al., performed interventions in patients with a resting gradient <30 mmHg. Between the subgroups of patients with a resting gradient <30 mmHg (n=54 up to now, post-extrasystolic gradient 111 ± 45 mmHg) and ≥30 mmHg (n=95) no significant differences were found with regard to the baseline characteristics and the long-term improvements of septal thickness, NYHA functional class, exercise capacity, maximal oxygen consumption, cardiac index at peak exercise and pulmonary artery mean pressure at workload.

Interestingly, similar results were published for surgical myectomy. In 1996 Robbins et al. reported on 31 out of 158 patients (20%) who were operated on with resting gradients <20 mmHg[6], and in 1978 Maron et al. described 28 out of 107 patients (26%) with resting gradients <50 mmHg[7]. In both series they achieved as much symptomatic benefit from septal myomectomy as did patients with marked basal gradients.


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149 patients (1 with regard to our own results in functional approach. This holds true for much smaller lesions induced by a fi...Doppler echocardiography [14], and the introduction of programmed stimulation for reproducible induction of atrial flutter and of new onset of atrial fibrillation on the fourth day after TASH.

**Drug therapy after a successful TASH procedure**

Whether drug therapy should be used prophylactically to delay disease progression and improve the prognosis in critical cases, for all publications dealing with follow-up data after catheter intervention for hypertrophic obstructive cardiomyopathy. Compared to the stimulation of a single premature beat with a fixed coupling of 370 ms the isoproterenol infusions, amyl nitrite inhalation [13], and Valsalva manoeuvre (identical intensity?) are severely limited by a lower reproducibility.

We disagree that myocardial contrast echocardiography is the only approach to avoid the ablation of ‘other structures than the septal target region’. 1–2 ml of radiographic contrast agent injected via the inflated PTCA catheter verifies the correct position of the balloon by a persistent deposit of contrast agent at the septal target site. Collateral vessels connecting the septal perforator artery chosen to remote areas of the septum or the free wall are easily detectable by biplane fluoroscopy and can be spared by super-selective ethanol injections into the side branches of the septal perforator arising proximal or distal from the potentially dangerous collateral connection. Following this rule, biplane left (n=140) and right (n=70) ventricular angiograms (performed during the routine control investigation after 2 weeks, 7 months or 2 years in 81 patients) remained without regional contraction abnormalities distant from the septal target site.

The patient treated successfully by surgical myectomy and mitral valve replacement is a completely different issue. Alcohol necrosis of a left ventricular papillary muscle — suggested by Faber — was excluded intra-operatively. Only a very small haemorrhagic necrosis of the subaortic septum was found. For the TASH procedures, only a very small side branch of the first septal perforator artery could be used, which was too large overall. In consequence, the ablated area of hypertrophy became too small (maximum rise in creatine phosphokinase activity to 134 U·l⁻¹), and there was high-grade recurrence of the obstruction as well as new onset of atrial fibrillation after the TASH.

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asymptomatic patients has been a subject of debate for many years. The effectiveness of prophylactic treatment has not been tested in controlled studies. Therefore, treatment aimed at preventing the progression of disease does not appear justified in most asymptomatic patients[1]. With regard to the well known side effects of medical therapy in hypertrophic cardiomyopathy[2,3] and a small but important risk of late sudden atrioventricular block, drug treatment should not be given on a routine basis. In our hands the TASH procedure had a very impressive clinical success rate that compares favourably to the results of surgical myectomy and gives us the opportunity to individualize medical therapy after intervention. Interestingly, with regard to clinical success rate, substantial improvement in pulmonary artery mean pressure at work and maximal oxygen consumption, cardiac index at peak exercise and pulmonary artery mean pressure at workload, no significant differences were observed between the subgroup of patients that remained on medical therapy on a routine basis (patients 1–50) and the subgroup of patients treated with a more individualized post interventional medical regime.

In conclusion, regardless of the intensity of the resting gradient, we restrict the TASH procedure to patients with a substantial provocabale gradient and severe symptoms refractory to medical treatment, strongly recommend a functional approach that relies on ischaemia-induced gradient reduction before ethanol injection, and individualizes medical therapy after successful catheter intervention. We disagree with the suggestion given by Faber, that the use of intra-procedural echocardiography is a simple solution for most of the technical problems inherent in the catheter-interventional therapy of hypertrophic obstructive cardiomyopathy. For a safe and effective TASH procedure appropriate indication, profound knowledge of the disease and considerable technical expertise are required. These preconditions are fulfilled by Faber et al., who described a further decrease in lesion size after patient number 30[12]. However, with regard to our experience and the examples drawn from the literature[1,8,11,12] this indicates a learning curve, whereas myocardial contrast echocardiography added little to the overall positive clinical and haemodynamic results of transcoronary ablation of septal hypertrophy for hypertrophic obstructive cardiomyopathy.

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References

Anorectic-induced valvulopathy

The Hotline Editorial on anorectic-induced valvulopathy by Silvestry and St. John Sutton[1] is timely and the advice offered is pertinent, especially regarding the length of follow-up. They proposed an arbitrary time period of 3 years of follow-up. This is a very wise recommendation in view of the recent report that severe mitral regurgitation could occur as late as 2 years after short-term exposure to anorectic drugs[2]. Biswas et al.[3] reported on a 32-year-old woman who received fenfluramine and phentermine, 20 and 15 mg. day–1, respectively, for 3 weeks. The patient, who remained asymptomatic for 2 years before

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