

Surgical septal myectomy versus septal alcohol ablation for hypertrophic obstructive cardiomyopathy

A continuing debate

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There is an ongoing debate regarding the optimal interventional treatment in patients with drug-refractory severely symptomatic hypertrophic obstructive cardiomyopathy (HOCM). Surgical myectomy, if performed in experienced centres, is considered as the "gold standard" of treatment in those HOCM-patients who have severe symptoms despite optimal medical therapy. In the last ten years a new interventional non-surgical technique, ie, alcohol septal ablation (ASA), has been introduced in the management of severely symptomatic HOCM. The use of this procedure is being promoted worldwide especially in those centres that perform therapeutic interventions.

The article by Streit et al. [1] published in Swiss Medical Weekly, coming from an interventional institution, focuses on the development of recurrent tachyarrhythmias post ASA performed in symptomatic patients with HOCM. The authors reported a significant reduction in left ventricular outflow tract gradient and an improvement in patient NYHA class during a mean of 2.8-year observational period. The authors also stated that there was no difference in the incidence of non-sustained ventricular tachycardia after ASA.

Although this study is very interesting, there are many concerns that should be discussed more extensively. We believe that the number of patients who underwent ASA seems far higher for the total group of patients seen in this institution (24 out of 54 seen patients underwent ASA). It is not mentioned in the text if the aforementioned institution is a referral centre for cardiomyopathies or a specialized centre performing ASAs, which would justify the high proportion of ASA procedures. It is our perception that there is an overuse of ASA procedures in several centres specialized in this technique, where interventions are performed for a minor indication. The absolute indication to perform ASA or surgical myectomy is severe dyspnoea (NYHA III-IV) refractory to optimal medical treatment in patients with HOCM. The optimal medical treatment should include the addition of disopyramid combined with β -blockers and diuretics with caution, if necessary. The authors do not mention if such a treatment was introduced prior to ASA procedure. Syncopal episodes or refractory angina do not constitute an interventional indication. Additionally the 16 of 24 patients

who were monitored over 24 hours pre and post ASA do not represent a sufficient sample to permit conclusions regarding heart rate and arrhythmias assessment as a safety measure.

We agree that risk stratification has been a major issue in patients with hypertrophic cardiomyopathy (HCM). Unfortunately all non-invasive tests for risk stratification were not completed by all patients in the cohort. Exercise testing was performed in only 14/24 and 24-h ECG monitoring in 16/24 patients. There were 11/24 patients with syncope and 2/24 patients with maximum wall thickness ≥ 30 mm. Why did they not qualify for an implantable cardioverter defibrillator implantation?

Over and above the purpose of this study, the risk of induced malignant ventricular arrhythmias after ASA should not be underestimated. It is a very simple hypothesis that hearts with extensive myocardial fibrosis are more prone to ventricular arrhythmias. ASA procedure, irrespective of the alcohol amount used, leads to the generation of a myocardial scar ie to more extensive fibrosis [2]. On the other hand, there is data suggesting that surgical myectomy may reduce the incidence of sudden death in patients with HOCM [3, 4]. Unfortunately a randomized trial comparing surgical myectomy to ASA for HOCM does not seem feasible at the moment [5]. In conclusion surgical septal myectomy remains the treatment of choice in severely symptomatic patients with HOCM, if performed in dedicated cardiothoracic centres.

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Authors' reply

Otto Hess

Thank you for your comments. You mention in your letter that surgical myectomy is the gold standard for treatment of hypertrophic, obstructive cardiomyopathy (HOCM) around the world. You comment that alcohol ablation of the septum in hypertrophic cardiomyopathy is overused and the indication for the intervention is too soft.

Indeed, 24 out of 54 screened patients underwent alcohol ablation of the septum. Normally, 25-30% of all HOCM patients have an obstructive form and not 50% as in our study. This can be explained by the fact that we are a referral centre for hypertrophic cardiomyopathy in Switzerland and we receive many patients from other centres for alcohol ablation. In the last 3-4 years surgical myectomy has no longer been performed and has been limited to cases with unsuccessful alcohol ablation or accompanying valvular disease requiring valve reconstruction. Nevertheless, the ratio between surgical myectomy and alcohol ablation of the septum has dramatically changed in favour of alcohol ablation (see attached figure).

The indication for alcohol ablation of the septum has changed in the last few years with regard to outflow tract gradient at rest and during provocation. The indication for septal myectomy was an outflow tract gradient ≥ 50 mm Hg at rest and ≥ 100 mm Hg after provocation (extrasystole, amylnitrite). This has been changed to 30 mm Hg at rest and 60 mm Hg after provocation. In all patients medical therapy is optimized before intervention but disopyramid is only rarely used in our country. We prefer medical treatment with beta-blockers or calcium-antagonists in combination with diuretics when necessary.

Risk stratification has been carefully done in our study population but exercise testing and Holter monitoring was not done in every patient when the indication for the intervention was clear. An implantable cardioverter defibrillator was implanted only in two patients when clear evidence for a high cardiovascular risk was present. The hypothesis that malignant ventricular arrhythmias are induced by alcohol ablation with extensive myocardial scarring is not supported by good scientific data. There is a small risk of intramyocardial conduction blocks by alcohol ablation but the benefit of afterload reduction, regression of ventricular hypertrophy and improvement of myocardial perfusion is probably much more important in the reduction of arrhythmias. Clear evidence for either one of these theories is currently lacking.

In summary, we believe that alcohol ablation of the septum in hypertrophic, obstructive cardiomyopathy is the therapy of choice and surgical myectomy is reserved for patients with treatment failure or additional valvular disease (see attached figure). Pre-existent left bundle branch block may represent a relative contraindication for alcohol ablation as 60% of all patients undergoing alcohol ablation develop right bundle block. Another contraindication may be amiodarone treatment, due to the associated AV-conduction prolongation. A third contraindication to alcohol ablation may be the

presence of an AV block I or II. Nevertheless, we believe strongly that alcohol ablation is the new gold standard for treatment of hypertrophic obstructive cardiomyopathy in 2008.

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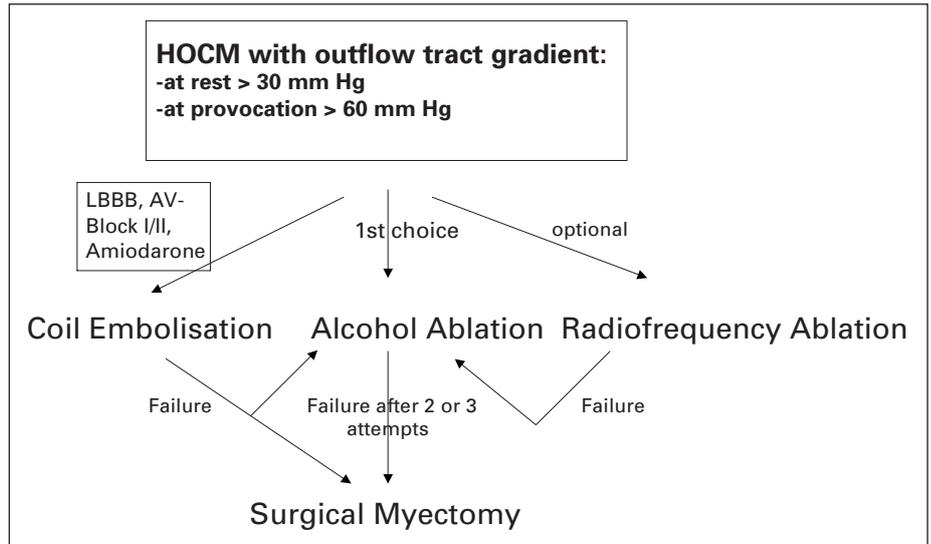


Figure 1
 Treatment recommendation in HOCM (adults).

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