INTRODUCTION

GLN, a 47 year old female who presented to a private health institution with a history of having suffered a myocardial infarction three weeks previously. She is a known type II diabetic with a family history of the same on the mother’s side of the family. She otherwise had no family history of cardiovascular disease and she neither smoked nor drank alcohol.

On examination at her first visit the main significant findings were of mild pallor with normal haemodynamics. An apical systolic murmur was demonstrated.

Initial echocardiography demonstrated LV scaring anterior-laterally with early remoulding and intact ventricular septum.

On a follow up visit a week later she had by then developed difficulty in breathing and severe shortness of breath after walking a distance of 50m. Blood pressure measured 90/70 mmHg with a systolic murmur still elicited. After adjustment of treatment she was reviewed after a further week and repeat echocardiography demonstrated an apical VSD.

Coronary angiography demonstrated a totally occluded proximal LAD with diffuse disease of the right but otherwise reasonable flow down the right side.

At surgery (approximately five weeks after the initial infarct) an infarcted area of the anterior ventricular wall was found. This infarcted area was used as the entry point into the ventricular cavity and below a corresponding perforation of the ventricular septum of about 0.5cm² identified (Figure 1).

SUMMARY

Post infarction ventricular septal defect results from perforation of the ventricular septum secondary to ischaemic injury following myocardial infarction. Ischaemic heart disease till recently was thought to be an uncommon disease in this part of the world, but now more and more cases are being seen as a result of the changes in the life styles of the population in this country and in the developing world in general (1-4). This is a case report of the first case of post infarction ventricular septal defect presenting to surgery for repair in this country.
The septal defect was repaired with a gortex patch and the ventriculotomy through the scared ventricular wall repaired with teflon buttress suture. No coronary bypass procedure was performed.

Postoperatively she did well and maintained normal haemodynamic functions. Postoperative echocardiogram immediately prior to discharge confirmed successful VSD closure. GLN was subsequently discharged.

**DISCUSSION**

This, the authors believe, is the first published report of a post infarction VSD repair carried out within this country; and none of the authors have come across another similar report, even unpublished, within the East Africa region as a whole.

Coronary artery disease was said to be uncommon in this region by earlier authors; but now more cases of coronary heart disease are being seen. In our premier national and teaching referral hospital, the Kenyatta National Hospital in Nairobi, only 1.3% of the open heart surgical cases have seen coronary bypass procedures out of just over 800 cases to date (5).

This pattern of a rising incidence of coronary heart disease is repeated in all countries of the developing world; and today cardiovascular disease accounts for over 50% of the total disease burden (4). Predominantly though, the majority of these cases still travel out of country for coronary artery surgery; either to India, America or the United Kingdom where the condition is more prevalent. It is however very unlikely those developing post infarction VSD’s are able to do the same. The scenario for these patients in our locality is probably death before any intervention.

This report is of a patient who presented in a private hospital setting with a typical history for a post infarction VSD; sudden onset chest pain followed by increasing dyspnoea and the presence of a systolic murmur on auscultation.

GLN presented with the most common form of post infarction VSD occurring in up to 60% of cases of post infarction VSD (6). She also typically presented with the risk factors for VSD formation; the female sex, totally occluded single infarct related vessel and no previous history of smoking or heart disease (7-9), she was however a diabetic.

Also of interest is that the development of the VSD in GLN seems to have taken at least 30 days, which is slightly longer than in the GUSTO-1 study, (in which the results of more than eleven thousand patients were analysed), where 94% of the VSD’s had developed within a week of the infarction (7). This very late presentation is no doubt unusual and most probably was a positive factor towards her improved survival chances.

Worldwide overall surgical results for this condition have been poor with mortality figures ranging from 45% to 90% (9,10). Variables like preoperative cardogenic shock, preoperative renal failure with elevated creatinine contributing to this high mortality. Exclusive medical management also favoured a worse outcome than surgical intervention. Fortunately for GLN she presented with none of these unfavourable variables though her blood pressure had been noted to have started falling slightly.

The surgical approach to the VSD by entering the ventricle through the infarcted ventricular tissue is another variable aiding improved survival; this technique was brought into vogue by the Boston group (11). This approach has been demonstrated to greatly reduce the postoperative myocardial dysfunction.

Good surgical outcomes from surgery as mentioned are low. However certain predictors have been shown to be associated with improved immediate post surgical outcome (12). Haemodynamic stability preoperatively and the long interval between infarction and VSD formation being the two most important in favour of GLNs case. Chronic VSDs as well as being associated with a better prognosis are also technically easier to repair reducing operating time (10). This observation was definitely the case here with well defined surgical margins identified at surgery.

The majority of studies seem to suggest that concomitant coronary artery bypass grafting has no benefit to peri-operative survival (10, 13-15). Based on these previous findings no coronary grafting was performed on GLN, however it is an essential action taken to prevent further advance of the right coronary disease. This right vessel disease may prove later on to be the life limiting condition in her case if appropriate changes towards a healthy lifestyle are not embraced.

Surgical repair is associated with a high early postoperative mortality: up to 95% within the first three months. Thereafter the mortality rate plateaus off (16). No variables associated with long term survival following post infarction VSD repair have however so far been identified (17). The authors are anticipating a fair long term postoperative survival results for this patient. Low long term mortality figures of only 6% were reported by Grenshaw et al for patients surviving beyond 30-days, while others have reported 10 year survival rates of 50% (17, 18). This however is very dependant on how other coronary risk factors are controlled.

This is the first repair of post infarction VSD we believe has been reported as having undergone successful operative repair in Kenya, albeit having presented with very favourable surgical risk levels. With the increasing coronary incidence and growth in the number of established cardiac centres in this country, which now stand at three, we expect that we will be seeing more similar cases in future.
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REFERENCES