other stakeholders from a debate to which they could usefully contribute. Whether you refer to ‘leadership structures’, ‘distributive leadership’ or a ‘systems paradigm’, it does not matter, the message is clear. As Mr Jarvis argues and as we repeatedly emphasize in our review one surgeon cannot perform all the functions of leadership required in modern cardiac surgery and all stakeholders must be empowered to demonstrate leadership, innovate and collaborate.

Second, while we agree with many of Mr Jarvis’s observations on medical professional culture, we believe that being philosophical about leadership and models of strategy has utility only when they inform practical and tangible positive action. As Mr Jarvis suggests cardiac surgery is a product of the system, its culture is defined by its history. Positive organizational cultures cannot simply be ‘transplanted’ from other disciplines by ‘regime change’ but must be incrementally developed by tangible action. In our review, we advocated a practical framework of clinical leadership, academic leadership, educational guidance and training and stakeholder engagement. This is perhaps not original, there is obviously overlap between domains and it is perhaps less elegant than generic models of leadership and strategy; however, it can be readily applied to address the fundamental problems that cardiac surgery faces. If other centres have alternative strategies to address these problems then we applaud them and encourage them to contribute to this debate.

Our words and model structure are not sacrosanct. Our speciality stands on a precipice, we must debate, we must act and we must do this soon. We must avoid bickering about semantics and models of leadership; it is now the time for action.

REFERENCES


LETTER TO THE EDITOR

Management strategies in aortic coarctation

Ganesh Shanmugam* and Gyaandeo Maharajh

Division of Cardiovascular Surgery, Children’s Hospital of Eastern Ontario, Ottawa, ON, Canada

* Corresponding author. Division of Cardiovascular Surgery, Children’s Hospital of Eastern Ontario, 401 Smyth Road, Ottawa, Ontario K1H 8L1, Canada.

Tel: +1-613-7383640; fax: +1-613-7384835; e-mail: sgunpat@hotmail.com (G. Shanmugam).

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Früh et al. [1] report their data from a retrospective study of coarctations.

The small number of patients in each group and the lopsided distribution of patients in each arm render statistical analysis meaningless.

The data in the abstract are different from that in the text. [Abstract: Group A, B and C: n = 48/16/27. Results section: Group A, B and C: n = 48/17/26.] ‘In the whole group 16 patients need reintervention. In the next paragraph, it appears 15 needed reintervention [12 natives + 3 recoarctation].’ The accuracy of this dataset is questionable.

There is no data on resolution of hypertension in the various groups.

Were the 24 recurrent coarctations, following surgery or catheter intervention?

The authors state that the complication and reintervention rates are comparable between the three groups. The primary focus is supposedly a comparison of the modalities of treatment in each group—not a comparison of overall complication and reintervention rates between the three age groups, which could all be good or all be bad! This is not in line with the primary focus of the paper.

In group C, stent implantation is an excellent alternative to surgery. Do the authors recommend stent implantation as a primary modality or as ‘an alternative to surgery’. In Group B, the reintervention rates for surgery vs catheter intervention [balloons + stents] in native coarctation were 0 vs 37.5%. In recoarctation, there were no catheter interventions at all, which precludes any comparison. Based on these data, how would the authors justify catheter intervention in Group B, as part of the protocol? The 37% incidence of recoarctation following catheter intervention, despite comparable acute reductions in gradients, indicates that an acute gradient reduction is an unreliable predictor of subsequent recoarctation.

In Group B, it is stated that the preference is for surgery when there is associated arch hypoplasia. Comparing isolated coarctation with that of arch hypoplasia + coarctation is to compare similar pathological entities but at different points on the spectrum of severity, which potentially biases the results against surgery. Yet, reintervention rates were lower for surgery [0 vs 37.5%]. If anything, these data suggest that surgery is a better option in Group B.

The authors state that in Group B, the need for reintervention following balloon dilatation is high, and stents are not rec-
ommended due to the frequent need for redilatation. If balloons are risky, stents are not recommended and surgery has a reintervention rate of 0, why do patients in Group B have catheter intervention at all?

From Table 2, it is obvious that this study has one of the shortest follow-ups, especially in Group C, where most of the patients had stent implantations. The incidence of recoarctation and reintervention could be significantly under-reported.

The conclusions of the study have no direct correlation with the data presented.

We thank Dr Shanmugam and Dr Maharajh for their important comments, which underline the need to address the points they raised and to correct for statistical power. However, the number of patients in our study is not underpowered. Hence, we disagree with their interpretation of the results of group B, including patients at an age between 6 months and 6 years. Indeed, as the authors correctly comment, statistical comparison remains difficult and further subanalysis comparing subgroups within patients of group B is limited and therefore was omitted.

Nevertheless, optimal treatment of this age group remains open and is still a matter of ongoing debate between surgeons and interventionists: cardiac surgery seems to be suitable, but further studies are required in the future, including multicentre prospective clinical trials, to answer which management strategies in aortic coarctation are optimal in each age group.

In conclusion, the publication was not intended to serve as a state-of-the-art paper such as recommend stent implantation as a primary modality, but as an excellent alternative to surgery in patients older than 6 years of age (group C). Nevertheless, in our institution, optimal treatment is discussed and planned for each patient by an individual approach involving all members of our interdisciplinary team of cardiac surgeons and interventionists: cardiac surgery, paediatric cardiology, anaesthesia and intensive care medicine.

Again, the authors would like to thank Dr Shanmugam and Dr Maharajh for their important comments, which underline that our data give new insights into an age-dependent approach in the management of aortic coarctation.

**REFERENCE**