



## Correspondence

## Letter to Editor

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We are writing to encourage reviewers and editors to establish a higher level of data reporting for the critical determinants of vascular stenting procedures, so that procedural outcomes may be analyzed individually. We disagree with the conclusion in Ponamgi et al. [1] "... all four patients that died in our series had bilateral disease. ... Thus, interventions for this patient group may afford limited symptomatic relief without affecting mortality."

Our experience of the past 2 decades convinces us that individual patients with bilateral fibrosing mediastinitis (FM) clearly benefit from pulmonary vascular stenting, but that benefit depends entirely on successful restoration of a critical narrowing. For example, our first pulmonary vein stenting for FM in June 1996, was for a 26 year old who was NYHA functional class IV, intermittently coughing pints of blood, with pulmonary artery pressures equal to his systemic pressures, and who we estimated survival of days to weeks based on prior experience. His right lung received no pulmonary perfusion, and the conjoined left pulmonary veins entered a short narrow orifice (4 mm) into the left atrium. When a 14 mm stent was placed in the orifice, he was restored to class II functional status within a few days, and then drove large trucks professionally for most of the following 9.5 years that he survived. This experience and subsequent similar cases convinced us that some patients with bilateral disease do receive substantial benefit, even for mortality.

We agree that bilateral disease accounts for the vast majority of mortality in FM. We tallied the number of deaths from FM of patients seen by one of us at our institution in the last 35 years. This was not an exhaustive search, so we may have missed some patients. Of the 21 FM deaths of patients known to us, 19 were patients with bilateral disease, and 2 deaths were patients with unilateral FM. The deaths in unilateral FM patients were preventable, at least in part, as one was a young man who died after inappropriate surgical pneumonectomy at an outside hospital, and the other from recurrent pneumonia in the sole functional lung. So our experience suggests that bilateral disease accounts for nearly all the disease related mortality, despite comprising the minority

overall (20% of all FM cases). Therefore we believe that the only subgroup who has any potential for possible mortality benefit is those with bilateral FM. In fact, in data that was previously published by our group, intervention in patients with bilateral disease was associated with improved 5 year survival (89.5% versus 52.2%).

The Ponamgi report does not provide sufficient information about the stenting procedures performed to assess whether the procedures performed were sufficient. The use of drug eluting stents in the Ponamgi report suggests that at least some of the stents implanted were small caliber as there are no large caliber drug eluting stents available. In patients with FM, small caliber stents placed centrally would typically not be able to achieve adequate diameter for pulmonary veins that often are forced to accommodate additional pulmonary flow secondary to other sites of pulmonary vascular obstruction or occlusion. We believe that reports of pulmonary vascular stenting in patients with FM should provide as much of the critical data as possible including diameter of stenosis in each vessel, the pressure gradient across the stenosis, the size and type of stent placed, the location within the vessel of stent placement, as well as all collateral involvement of airways, arteries and veins. Without this data it is not possible to determine whether an effective procedure was conducted.

Our experience leads us to believe that effective pulmonary vascular stenting for carefully selected patients clearly improves survival, as well as symptoms, and that balloon dilation alone has no durable benefit. Further, the FM patient who has the highest possibility to benefit from stenting includes a symptomatic patient with bilateral FM with a critical stenosis that is a location amenable to stent relief. We have had success in recannulating even completely occluded vessels using large caliber bare metal stents, with high pressure balloons for deployment. Caution is indicated however, as untoward complications are noteworthy even at experienced centers. For instance we reviewed the experience of a young lady in whom an under sized stent was deployed into a pulmonary vein, but embolized to a mesenteric artery.

Further Ponamgi et al. also concluded "Eight patients were identified, with a mean age of 41 years (24–59 years) .... We describe the largest reported case series of catheter-based intervention for PV stenosis in FM ". However, we note that our series reported in 2011 (ref 21 in Ponamgi; [2]) described the specific features of 77 stents (including 21 pulmonary veins) to treat 40 FM patients.

In summary, we believe that selected FM patients clearly benefit from pulmonary vascular stenting, especially those with bilateral disease, and that reviewers of case series should hold authors to a higher level of description of the specifics of the anatomy and procedure, so that outcomes can be judged by whether an effective procedure was accomplished.

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**References**

- [1] S.P. Ponamgi, C.V. DeSimone, C.J. Lenz, M. Coylewright, S.J. Asirvatham, D.R. Holmes, D.L. Packer, Catheter-based intervention for pulmonary vein stenosis due to fibrosing mediastinitis: the Mayo Clinic experience, *Int J Cardiol Heart Vasc* 8 (2015 Sep 1) 103–107 PMID: PMC4765364.
- [2] E.L. Albers, M.E. Pugh, K.D. Hill, L. Wang, J.E. Loyd, T.P. Doyle, Percutaneous vascular stent implantation as treatment for central vascular obstruction due to fibrosing mediastinitis, *Circulation* 123 (13) (2011 Apr 5) 1391–1399 PMID: 21422386.