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INTRAOPERATIVE CORONARY ANGIOGRAPHY: WITH OR WITHOUT ISCHEMIA?

To the Editor:

We read with interest the article by Kilian and coworkers[1] entitled ''Intraoperative coronary angiography in the management of patients with acute aortic dissection and endocarditis.'' The authors describe the possibility of performing an intraoperative angiographic assessment of the coronary arteries in patients with potential contraindications to the conventional preoperative cardiac catheterization in the catheterization laboratory. In fact, in patients presenting with acute aortic dissection, the diagnosis is usually accomplished by means of computed tomographic scanning and transesophageal echocardiographic analysis, and the patient is immediately moved to the operating room for emergency surgical intervention. In such a setting, conventional cardiac catheterization is time consuming and could generate a harmful delay to intervention. Furthermore, patients with aortic valve endocarditis with vegetations are at high risk of embolization during cardiac catheterization.

We agree with the authors about the feasibility and efficacy of this diagnostic strategy, and we commonly use intraoperative coronary angiography (ICAN) in the following situations: aortic endocarditis, acute aortic dissections, and mechanical complications of an acute myocardial infarction. The latter, like postinfarction ventricular free wall rupture, could be better managed with an on-pump beating heart operation to reduce the ischemia–reperfusion injury[2] caused by cardioplegic arrest in patients with recent or ongoing acute coronary syndromes. Nevertheless, we are a little concerned with the technique described in Kilian and coworkers' article.[1]

The authors perform ICAN during cardioplegic arrest of the heart; this results in prolonged crossclamp time and, consequently, longer myocardial ischemia. This is particularly true if the coronary lesions are not easily detectable and several different projections are needed. Furthermore, this technique cannot be performed in patients undergoing an on-pump beating heart operation. Thus we strongly believe that ICAN should be carried out through a femoral artery access with the heart beating after aortic crossclamp removal and before weaning from cardiopulmonary bypass (CPB) or decannulation. In particular, in patients undergoing operations on the aortic valve, the ascending aorta, or both, ICAN can be safely performed after that the procedure is completed and the aortic clamp is removed. If coronary lesions are found, off-pump coronary artery bypass or, if that is not possible, on-pump beating heart coronary artery bypass grafting can be performed, thus resulting in less myocardial ischemia, shorter CPB duration, or both. Furthermore, additional information other than the coronary mold could be obtained with the beating heart technique: speed of contrast washout, milking effects, and, most of all, a more physiologic view of the coronary anatomy.

In conclusion, we believe that performing ICAN with the heart beating has several advantages. First, it does not increase crossclamp and CPB times. Second, it can be performed without many interferences, such as sternal retractors and aortic clamps. Third, it can be done during on-pump beating heart operations. Finally, it provides views similar to those obtained with a conventional study that, consequently, are more easily interpretable.

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Reply to the Editor:

We appreciate the response to our article ''Intraoperative Coronary Angiography in the Management of Patients With Acute Aortic Dissection and Endocarditis'' and thank D'Onofrio and colleagues for their interest in the described intraoperative angiographic technique. As mentioned in their Letter to the Editor, the authors discuss the prolongation of myocardial ischemia while performing intraoperative coronary angiography (ICA) during aortic crossclamping (ACC) instead of performing ICA after removal of the aortic clamp via a peripheral artery, as described in their case report[2] of a patient presenting with an ischemic rupture of the left ventricular lateral wall. We agree that ischemia should be reduced as much as possible and that performing ICA during the reperfusion period is a good alternative, but we wanted to avoid this approach for our patients.[1] We intended to intubate the coronary

ostia under visual control to prevent an aggravation of the type A dissection or induction of infective emboli with the tip of the heart catheter. In all our patients, we had to open the aortic root to deliver the cardioplegic solution and surgical repair; thus, performing the ICA was a subsequent procedure embedded into the surgical flow, and preparation of the C arm was done simultaneously while cannulating. The prolongation of the ACC (and the total operation time) took a mean of 12 minutes, and the overall myocardial ischemic time did not exceed 105 minutes for any patient. We believe that the described prolongation of ACC for these patients, who were not primarily admitted for coronary artery bypass grafting, is acceptable. Furthermore, a beating heart coronary bypass to the circumflex artery after aortic valve replacement requiring a luxation of the heart may risk a perforation of the prosthetic stents after aortic valve replacement.

The second issue highlighted by D'Onofrio and colleagues is a more physiologic depiction of the coronaries, including milking and contrast dye washout while performing ICA on the beating heart. In patients undergoing coronary bypass, we also perform ICA on the beating heart and especially in patients during off-pump coronary bypass procedures for quality control. In these patients, we also deliver the contrast medium to the opened chest to depict the distal anastomoses and the following native coronary portions.

As a positive effect in our patients presenting with acute aortic dissection type A or endocarditis, conducting ICA directly via the coronary ostia during ACC[1] may offer increased imaging quality because of the exclusive delivery of the contrast medium without sanguineous dilution.

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PREDICTOR FACTORS OF TRANSBRONCHIAL NEEDLE ASPIRATION DIAGNOSTIC YIELD IN SARCOIDOSIS

To the Editor:

We have read with attention the excellent work of Trisolini and associates[1] regarding predictor variables for transbronchial needle aspiration (TBNA) yield in sarcoidosis that was published in the April 2008 issue of the *Journal*. Regarding the results from the analysis of our experience in mediastinal and hilar lymph node TBNA in sarcoidosis, we have a few comments. In a 10-year period, we performed TBNA in 82 different lymph nodes in 57 patients with stage I or II sarcoidosis using a 19-gauge histology needle (MW-319; Bard-Wang, Billerica, Mass) in most of the cases (93%). The number of diagnostic samples obtained was lower than that reported by Trisolini and colleagues,[1] because we obtained adequate material representative of lymph node tissue in 49 (59.8%) of 82 lymph nodes sampled, although the nonnecrotizing epithelioid cell granulomas sarcoidosis type was observed in 36 (63.1%) of 57 patients (Table 1). However, we did not identify any predictor factor from that study. Although there are several possible explanations for these differences, we believe that two main factors have the greater influence. Trisolini and coworkers[1] included all cytologic samples systematically in their analysis, which notably increased the positive results. We did not perform cytology samples systematically when we performed TBNA with a histology needle. In addition, as we reported previously,[2] we usually performed TBNA of the most accessible and enlarged lymph node; we changed the lymph node station only if diagnosis was not achieved after three or four punctures. It seems, as Trisolini's group[1] concluded, that combining TBNA cytology and histology and the systematic puncture of several lymph node stations can increase the positive diagnosis in this disease. However, although using cytology for sarcoidosis diagnosis is widely reported,[3,4] it is not generally accepted[5]; furthermore, a histologic diagnosis is preferable in cases of atypical clinical presentation and in areas with a high prevalence of tuberculosis infection,[4] such as ours.[6] In our study, none of the 4 cases performed using cytology needles were valid diagnotic samples.

What also was surprising about the study by Trisolini and associates[1] was the low number of adequate TBNA histologic samples obtained (22.5% of lymph nodes sampled and 30% of patients), a lower percentage than they achieved in a previous study (both >60%).[7] Although the authors suggest that a growing reliance on cytology needles may explain the difference, such a notable reduction in TBNA histologic diagnostic yield in the 2-year period between the end of one study and the beginning of the other seems unlikely, especially given their high level of expertise. We suggest the possibility that the reliably good results with the cytologic samples have led to their being less aggressive and insistent in achieving adequate histologic TBNA samples, using a technique that is, moreover, clearly more difficult.

We agree with the authors that combining TBNA with transbronchial lung biopsy and bronchoalveolar lavage can avoid the necessity for mediastinoscopy in almost all patients with sarcoidosis