and no dilated sinuses. Because of that, your strategy is very interesting. I have two questions.

The first question refers to the cannulation. You cannulated all patients through the ascending aorta using the Seldinger technique and epiaortic echo. Could you explain how you managed to reach the true lumen and whether you had problems?

Your data showed an increase in the percentage of patients with moderate aortic regurgitation, from 3% post-operatively to 19% at follow-up. Thirty-eight percent of the patients with pre-operative moderate or severe aortic regurgitation had moderate aortic regurgitation again at follow-up, which reflects the data in the literature for such patients.

The average age of the patients was 68 years. And because of that, I would like to ask whether it would be an option for you, looking at your data now, to replace these valves intraoperatively?

Dr Yamanaka: I would like to answer the first question. In our series, we used central cannulation in more than 80% of patients; the other sites for cannulation were the right axillary artery or the femoral artery. We usually perform central cannulation guided by epiaortic and transoesophageal echo.

We initially check the ascending aorta by epiaortic echo and decide the site of puncture and we insert a guidewire and check whether it is located in the true lumen using both epiaortic and transoesophageal echo. Finally we insert a cannula using Seldinger’s method.

We try central cannulation wherever possible in all patients. If the patients’ haemodynamics are unstable, we alternatively use apex cannulation. And once again the second question?

Dr Pfannmüller: Would you replace the valves now if you know that 38% of the patients with previous moderate or severe aortic regurgitation have moderate aortic regurgitation again and the average age of the patients is 68 years?

Dr Yamanaka: Usually, we don’t replace the aortic valve in cases of moderate aortic regurgitation. I think most of the patients had normal valvular function previously, but the proximal extension of the dissection process caused acute aortic regurgitation as a result of the loss of the commissure support, so I think it’s not related to the severity of the aortic regurgitation perioperatively. Accordingly, we try to save the aortic valve whenever possible except for pathological dilated aorta.

The glue crisis in surgery of acute aortic dissection type A is ongoing

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Keywords: Gelatin–resorcin–formalin glue • Aortic dissection • Aortic root repair

The story of gelatine–resorcin–formalin glue (GRF) glue can be dated back as far as 1979, when Guilmet and Bachel described the use of biological glue in acute aortic dissection [1]. This publication boosted the dreams and visions of many surgeons, who soon tended to regard this and other glues as the key to hitherto unseen facilitation of surgery in patients with acute aortic dissection type A. I can still recall the careful but nevertheless evident enthusiasm of Hans Borst in this regard, which prompted him to design and introduce special clamps to enable the sealing process between the dissected aortic layers, today simply known as ‘Borst clamps’.

Like many others, he and his former co-workers in Hannover employed the glue from 1990 on and quickly a cohort of not quite 150 patients had accumulated.

Some years later—Borst had retired and was succeeded by Axel Haverich—our well-respected clinical fellow Suhji Fukunaga was entrusted to follow up this patient cohort. He calculated a re-operation rate of 16% as short as 23 months after primary surgery [2]. This was far more and earlier than expected, particularly in comparison to similar historic patient cohorts operated on at our institution before the glue era [3]. What had happened? ‘Lousy’ surgeons? Noteworthy enough, eight patients presented with ‘redissection’ of the aortic root, a complication largely unknown before.

I can also recall very well how I was punished by Jean Bachet, when I presented these data on the occasion of the EACTS meeting in Brussels on 21 September 1998.

He remarked in the discussion, very politely, that maybe ‘too many colleagues used too many polymerizing agents’ [2]. His true message to me was: If you don’t know how to use the glue, just don’t use it!

This was, when the ‘glue crisis’ began. Many papers followed, some of them with titles like ‘Devastating late complication for repair of type A acute aortic dissection with usage of gelatine-resorcinol–formalin glue’ [4].

And now we read the recent contribution by Yamanaka et al. [5]. The authors describe the course of a cohort of 140 patients operated on for acute aortic dissection type A. Their common denominators were (a) preservation of the aortic valve and (b) reinforcement of the aortic root with teflon felt plus usage of GRF glue.

The key results are stable/improved aortic valve function and no need for reoperations on the aortic root at a mean follow up of 44 months.

Unfortunately, not even this work will resolve the ongoing division of the cardiosurgical world into those who believe in the usage of GRF glue in the aortic root and those who do not.

In view of the surprisingly constant repetition of reports over the years of late ‘problems’ in the aortic root, when GRF glue was used during primary repair, this report is rather provocative. It leaves the readers with considerable uncertainty, even today [6–9].

I think it has to be taken as it is: an observational study, indicating and proving that the GRF glue must not necessarily be

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EDITORIAL COMMENT

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I think it has to be taken as it is: an observational study, indicating and proving that the GRF glue must not necessarily be
harmful, when used in the aortic root in patients with type A 
aortic dissection.

That’s life: sometimes controversial issues are not fully resolved 
even after more than 10 years of discussion. Those who are 
impressed and surprised by this result should revise their own 
technical habits in peace and quiet.

Are the volume proportions of both components as advised? 
Jean Bachet brought up that point many years ago (s.a.). Should 
the non-coronary sinus be resected slightly deeper, thereby 
heading up to a 1/3-Yacoub procedure, rather than commencing 
a plane supracommissural replacement in patients with acute 
dissection? Should there be an additional reinforcement of the 
suture line using teflon felt?

These and other ‘minor’ technical variants will probably con- 
tribute to either the long-term success or failure of a root repair 
including the use of GRF glue. All these considerations are still 
up to date and will be prompted by the reflective reader.

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