Appendix 1

Supplementary: Discussion

Dr. Hon Chi Suen (Hong Kong, China)

"I would like to congratulate the authors for successfully using uniportal thoracoscopic surgery to treat selected patients with pulmonary arteriovenous malformation. It is definitely a logical step to apply the most minimally invasive thoracoscopic technique in this situation. The fact that we can now perform precise uniportal thoracoscopic segmentectomy makes this approach appealing. I have a provoking question:

Can we make the surgical approach even more minimally invasive? If we apply the principle of embolization (that is to block the feeding artery only), can we just precisely locate the feeding artery and then staple and divide it without resecting any lung? That would be even more minimally invasive! Would this approach result in pulmonary infarction? I am curious about the authors' thought on this."

Dr. Patrick Dorn (Bern, Switzerland)

"Thank you very much, Dr Suen, for this question. Indeed, your idea is an interesting approach we have already thought about.

Technically, dividing only the feeding artery is feasible in most cases of simple PAVMs. Of course, it is going to be more challenging in complex cases, where for example two or more feeding arteries are supplying the malformation, which is sometimes the case based on our experience and also according to the literature we mentioned. We would expect pleuritic chest pain as most common complication after selective division of the feeding vessel only, what is already shown after interventional embolotherapy. This reaction seems to be successfully treated with pain killers in most cases.

Thanks to the systemic lung supply by bronchial arteries, lung infarction and consecutive infection are rarely seen. Nevertheless, we think that the minimally invasive surgical treatment of PAVM has the potential to assert itself as an attractive option in complicated situations or unsuccessful embolotherapy.

Additionally, we assume that the risk for recurrent disease is lower after resecting the corresponding lung parenchyma of the whole PAVM including feeding and draining vessels compared to dividing the feeding vessel only, but there is not yet any evidence about that in the literature."