

## **Hemoptysis & Pulmonary Circulation Center**

Hemoptysis can inflict both physical and mental damage on patients, and is potentially fatal. There are basically three treatment techniques: bronchoscopic intervention, catheter intervention, and a surgical approach. Bronchoscopy-guided topical hemostatic therapy (THT) is a safe and practical technique for the management of life-threatening hemoptysis.<sup>1</sup> However, THT has temporary effects and is thus indicated only for acute hemoptysis. In contrast, the surgical approach is a permanent treatment and is indicated for either acute or chronic hemoptysis. Despite this effectiveness, an operation should not be the first choice because of its invasiveness.

Bronchial artery embolization (BAE) is a widely used catheter technique for both acute and chronic hemoptysis. However, BAE is not necessarily regarded as a safe and long-lasting treatment. Arschang et al. noted, in their article on THT, that BAE was associated with high recurrence rates and serious complications including paraparesis and paraplegia, which should be taken into consideration when utilizing this treatment.<sup>1</sup> Mal et al reported an immediate effect in 77%, and long-term control of hemoptysis was achieved in 45% (46 patients over 11 years). They experienced numerous complications including one mediastinal hematoma and three spinal cord ischemias out of 50 procedures.<sup>2</sup> White noted in his editorial comment on the Mal et al article that a lack of experience by interventional radiologists with BAE is one of the reasons for this result.<sup>3</sup>

We established a **Hemoptysis and Pulmonary Circulation center** specializing mainly in the BAE procedure on May 15, 2006. Our center is the first of its kind in Japan. We performed 948 BAE procedures during the 5 year period which ended on July 31, 2011. The overall one-year hemostatic rate was 91.2 %.

To our knowledge, Khalil's group has the most experience with this disease (189 patients in three years; 63 cases/year)<sup>4</sup> and Kim's group is second (139 patients in four years; 34.8 cases/year).<sup>5</sup> It seems that there are many institutions experiencing about 10 BAE cases annually. To improve the technical level of the BAE procedure, concentrating hemoptysis cases at specialized institutions is necessary.

Meticulous use of MDCT analysis, development of original catheters, extensive experience, adoption of interlocking detachable coils (IDC)/Interlock coils as embolic materials, and the application of a transradial approach have improved the quality of BAE.

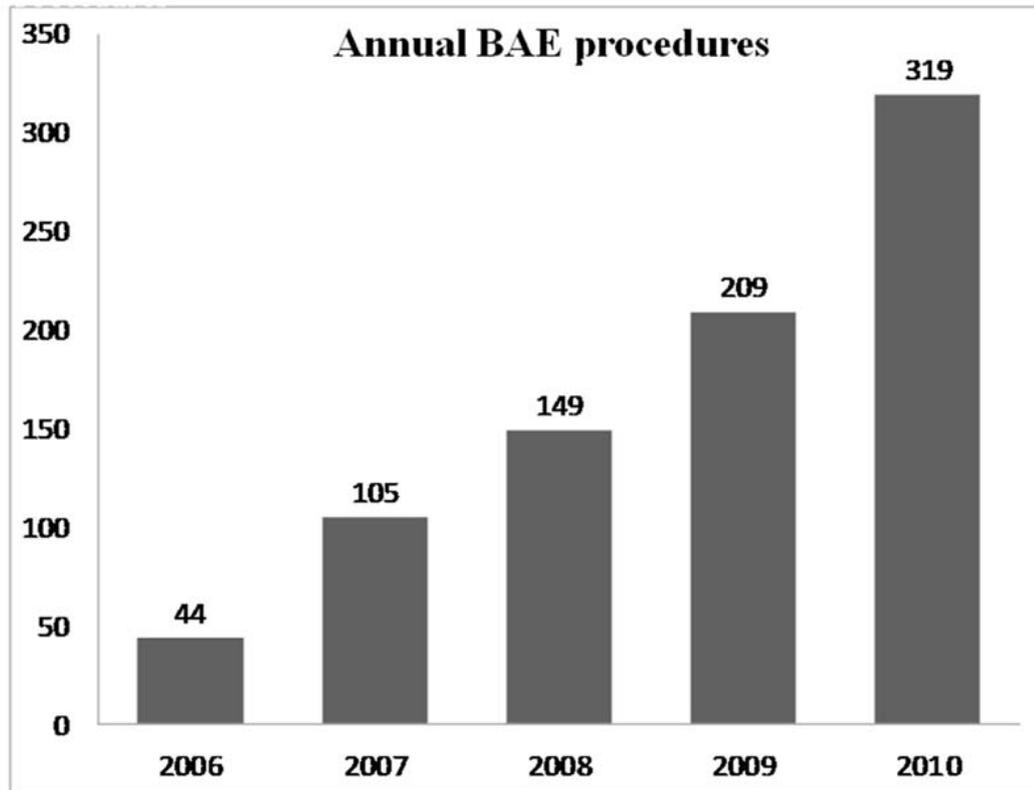
We are also performing catheter embolization for Pulmonary arteriovenous malformations (PAVM) and intravascular treatment for Lung Cancer( Tace ).

For further information, don't hesitate to contact us.

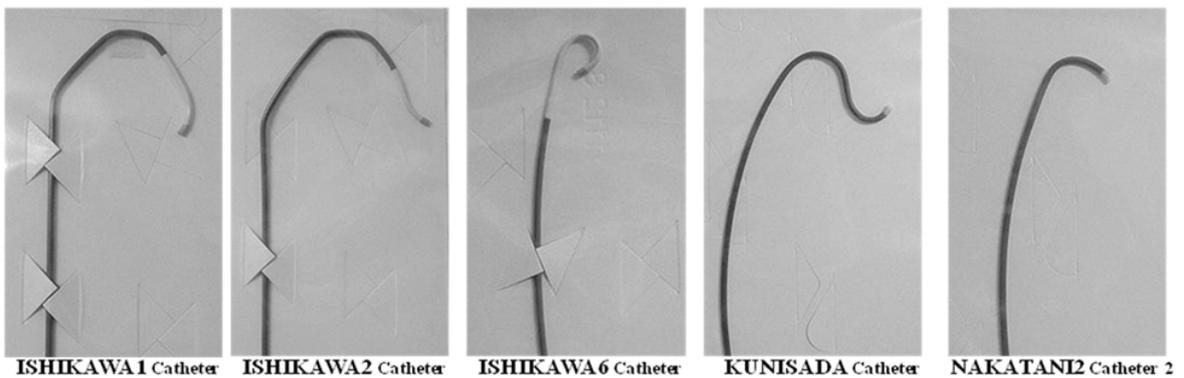
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## REFERENCES

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2. Mal H, Rullon I, Mellot F, et al. [Immediate and long-term results of bronchial artery embolization for life-threatening hemoptysis](#). *Chest*. 1999;115(4):996-1001.
3. [White RI Jr](#). Bronchial artery embolotherapy for control of acute hemoptysis: analysis of outcome. *Chest*. 1999;115(4):912-915.
4. Khalil A, Parrot A, Nedelcu C, et al. Severe hemoptysis of pulmonary arterial origin: signs and role of multidetectorrow CT angiography. *Chest*. 2008;133(1):212-219. Epub 2007 Nov 7.
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### Original Catheters designed for BAE



**Fig.2**