

## REVIEW ARTICLES

Richard P. Cambria, MD, Section Editor

# Isolated superior mesenteric artery dissection in China

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**Objective:** This study investigated the status of isolated superior mesenteric artery (SMA) dissection in the most populous country, China.

**Methods:** The Chinese-language literature published before December 2014 was reviewed. All case reports and series were included. If multiple reports originated from the same hospital and included overlapping time frames, only the most recent report was included. The clinical characteristics, imaging features, and treatment were analyzed. “Symptom relief” was used as the outcome measure.

**Results:** A total of 622 patients (88.5% male) with isolated SMA dissection were found in the Chinese-language literature. Patients were a mean age of 55.4 years. Analysis of the demographic data showed that isolated SMA dissection was most reported from the developed areas of China. The most common symptom (91.1%) was abdominal pain, and 42.7% patients had hypertension as a complication. Contrast-enhanced computed tomography was used to diagnose 95.2% of patients. The mean distance from the SMA ostium to the beginning of the dissection was 20.1 mm (range, 0-65.0 mm). The mean length of dissection was 63.1 mm (range, 10.7-205.9 mm). The percentages of patients who underwent primary conservative, surgical, and endovascular treatments were 63.2%, 3.2% and 33.6%, respectively. As primary management, the symptom relief rate of conservative management, with or without anticoagulation, was 62.6% and 86.5%, respectively. The best result of conservative treatment was achieved in cases of Yun type I and Luan classification type B. The symptom relief rate of surgical and endovascular treatment was 100% and 95.2%, respectively.

**Conclusions:** The incidence of isolated SMA dissection may not be as rare as previously reported. Endovascular treatment of isolated SMA dissection is commonly used in China as a first-line treatment. (*J Vasc Surg* 2016;63:530-6.)

Isolated superior mesenteric artery (SMA) dissection was once considered to be a rare condition. Only 47 patients were reported until 2001, and 296 patients were reported until 2013.<sup>1</sup> The epidemiology, etiology, mechanism, clinical, and imaging features have not been fully investigated. The treatment options include conservative, surgical, or endovascular procedures. However, there is currently no consensus on the optimal management strategy. Most cases have been reported in Korea, followed by Japan and China. In recent years, a growing number of cases of isolated SMA dissection have been reported, especially by Chinese authors.<sup>2-6</sup> To understand the contemporary status of SMA dissection in the most populous country, China, this systematic review was undertaken.

## METHODS

The Chinese-language literature published before December 2014 was searched using the terms “superior mesenteric artery” and “dissection” in the Chinese-language literature databases of Wanfang Data and the China National Knowledge Infrastructure. All case reports and series were included in the systematic review. If multiple reports originated from the same hospital and included overlapping time frames, only the most recent report was included. SMA dissections that were iatrogenic, traumatic, or complicated with aorta dissection were excluded. The clinical characteristics, including age, gender, medical history, risk factors, symptoms, management, and results, were analyzed. “Symptom relief” was used as the outcome measure because the authors of most reviewed reports used it as the outcome measure.

Imaging features, including location, length, and imaging classification of the dissection, were also analyzed if available. The following imaging classifications were used:

The Yun classification<sup>7</sup>: type I, patent true and false lumen revealing entry and re-entry sites; type II, patent true lumen but no re-entry flow from the false lumen; type IIa, visible false lumen but no visible re-entry site (“blind pouch of false lumen”); type IIb, not visible false luminal flow (thrombosed false lumen), which usually causes true lumen narrowing; type III, SMA dissection with occlusion of SMA.

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Author conflict of interest: none.

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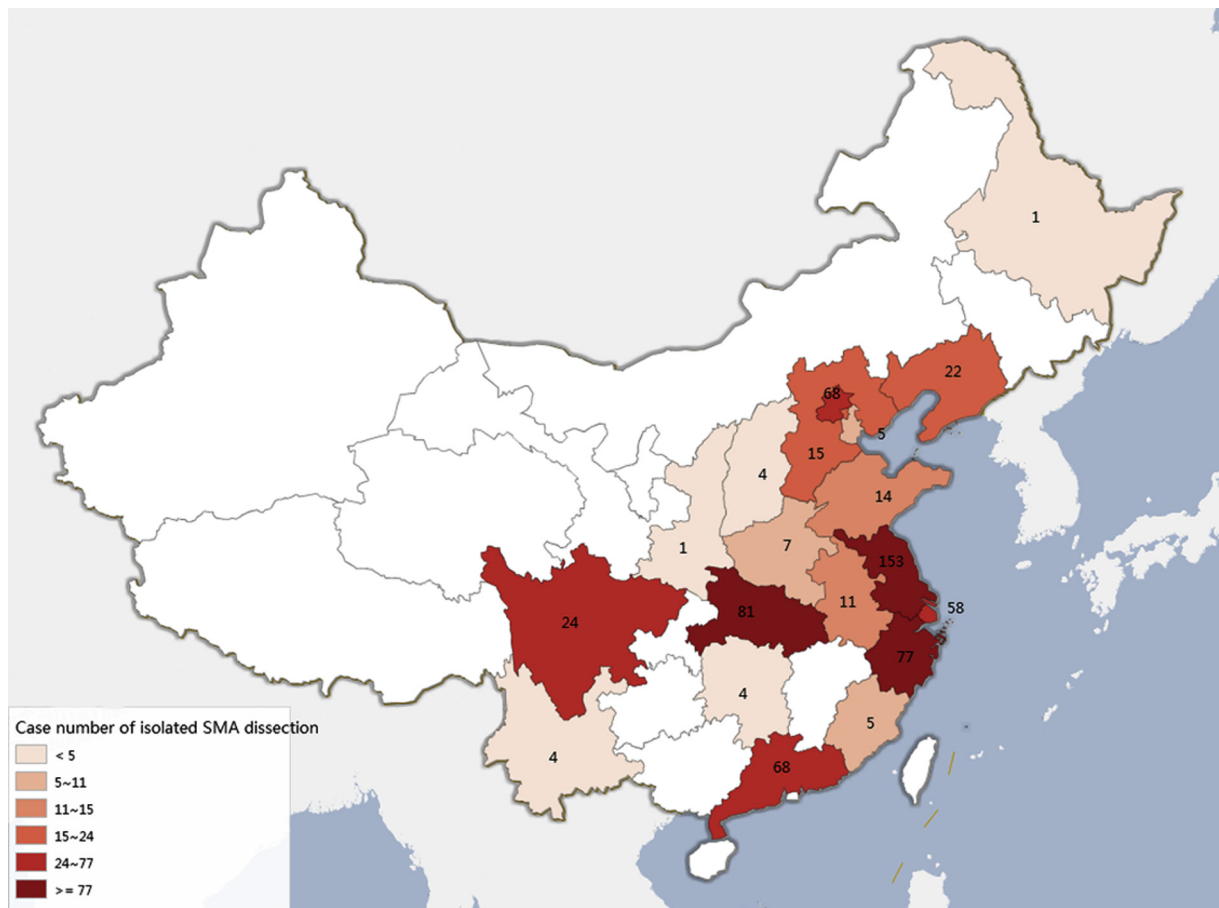
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**Table I.** Isolated superior mesenteric artery (SMA) dissection reported in the Chinese-language literature

Year	Publications, No.	Publication type					New cases reported yearly, No.
		Case report, No.	Clinical, No.	Radiographic, No.	Nursing, No.	Review, No.	
1984	1	1					1
2006	2	2					2
2007	1			1			5
2008	4	3	1				5
2009	4	2	1	1			9
2010	10	8	2				33
2011	20	8	6	3	1	2	56
2012	31	6	6	14	4	1	141
2013	27	5	11	9	2		189
2014	37	3	10	19	5		181
Total	137	38	37	47	12	3	622



**Fig.** The endemic distribution of isolated superior mesenteric artery (SMA) dissection in China.

The Luan classification<sup>8</sup>: type A, the dissection was localized at the curved part of SMA and extended proximally to the SMA ostium; type B, the dissection was limited to the curved part of the SMA; type C, the dissection was localized at the curved part and extended distally, but the ileocolic

artery or distal ileal artery was not involved; and type D, the dissection was localized at the curved part and extended distally to the ileocolic artery or distal ileal artery.

Data from each included study were extracted by one author (J.Y.L.) into evidence tables and then were verified

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