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Thirty Year-Old Korean Society for Vascular Surgery: Challenging Issues to Overcome



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As a past president of the Korean Society for Vascular Surgery (KSVS), it is a privilege and a great honor to express my personal views on our vascular surgery society with the topic of “30-year-old Korean Society for Vascular Surgery: challenging issues to overcome”.

KSVS was established in 1984 and is becoming 30 years old in the coming July, 2014. Thanks to the great endeavor of the founding members of KSVS, our society has become a leading academic society devoted to vascular disorders in this country and also works as an official affiliated society of the Korean Surgical Society.

Though KSVS has progressed in the quality and quantity of academic activities and members, we have many challenging issues at the moment. I thought it is time to assess our progression during the past 30 years and the current challenging issues.

Before we assess KSVS, we need to see the changes of our surrounding during the past 30 years. Korea has achieved a remarkable economic growth and there have been many changes in the Korean society during the period of 30 years including lifestyle, age distribution, disease pattern and medical practice.

First of all, I would like to describe the growth rate of

the elderly population in Korea during the past 30 years (Fig. 1A) [1].

This social phenomenon is attributed to a very low birth rate and lowered death rate. The Korean National Statistical Office is expecting the population pyramid in Korea to be changed to an inverted pyramid in 2040 (Fig. 1B) [2].

With an increasing proportion of aged people in this country, we encounter an increased number of patients with old-age diseases.

According to the report of Statistics Korea (Fig. 2) [3], the frequency of heart diseases among Koreans as a cause of the death has increased.

Fig. 3 shows changing trends in the causes of stroke among Koreans, which was reported by the Health Insurance Review & Assessment Service (HIRA, Quality assessment of acute stroke report) in 2012 [4]. We can see that the total number of strokes and cerebral infarctions has increased.

Carotid stenosis is a well-known cause of ischemic stroke. In contrast to the increasing number of patients with ischemic stroke, treatment of carotid disease is not so common in Korea and the majority of the carotid diseases are treated with carotid artery stenting (CAS) (Fig. 4) [5].

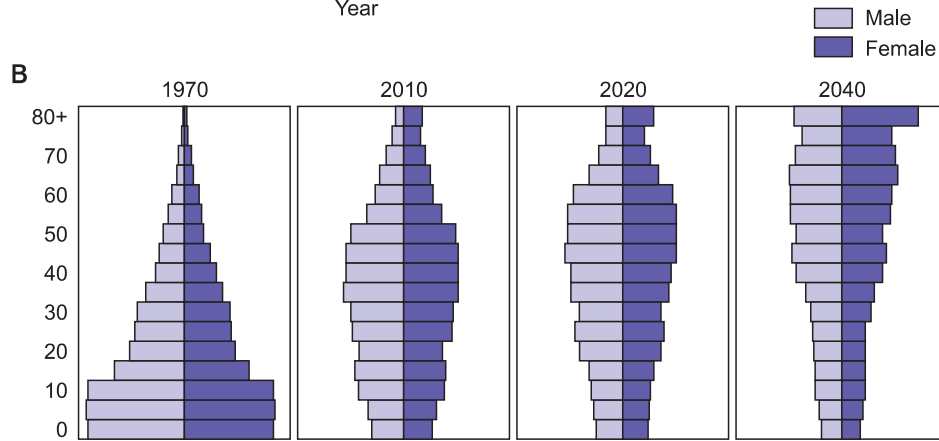
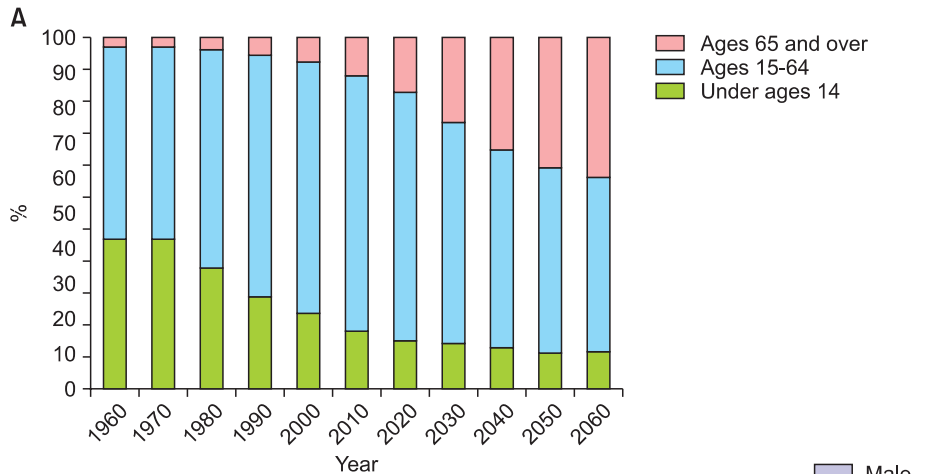


Fig. 1. (A) Major population by ages, in 1960-2060 (Statistics Korea, 2011, Population Projects for Korea: The 2010 Revision). (B) Population pyramid in Korea (Statistics Korea, 2006, World Population Prospects: The 2005 Revision).

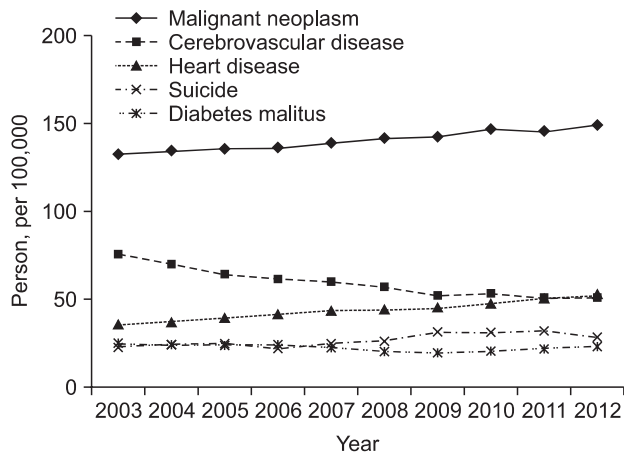


Fig. 2. Changing trend in death rates by leading causes (Statistics Korea, 2013). Here, I would like to review the current status of the treatment of a few common vascular diseases in Korea and share my personal assessment of our current situation.

This figure makes a contrast to US data in which, 80% or more of the carotid patients have been treated with carotid endarterectomy (CEA) (Fig. 5) [6].

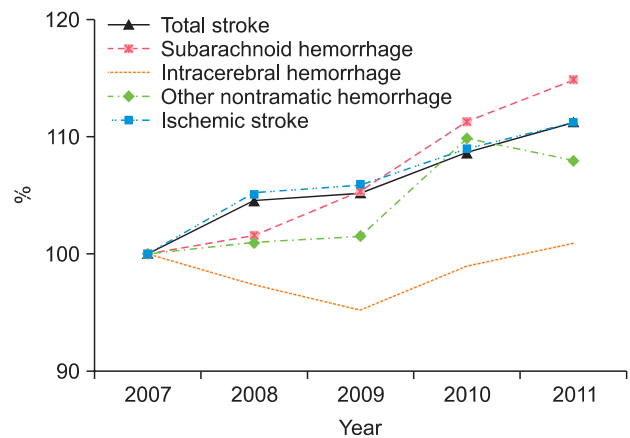


Fig. 3. Changing trend in various causes of stroke in Korea (Health Insurance Review & Assessment Service, 2012, 2012 Quality assessment of acute stroke report: The 2011 Revision).

I assume that there are many undetected and not properly treated patients with critical carotid stenosis in this country. Stroke Statistics from the Korean Stroke Society and Clinical Research Center for Stroke in 2013 reported

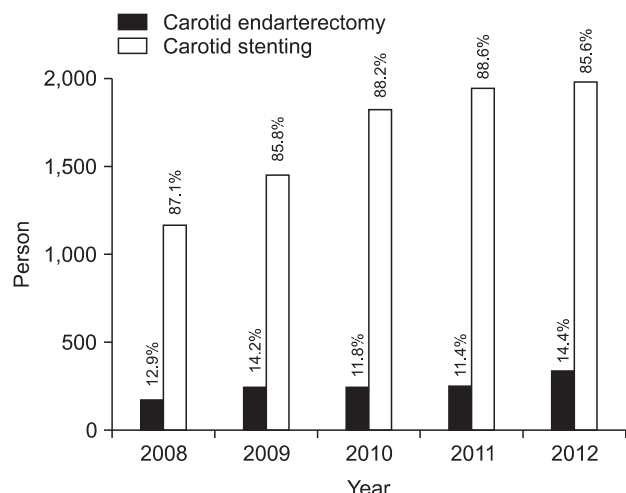


Fig. 4. Recent trend in treatment of carotid artery stenosis in Korea in 2008–2012 (Health Insurance Review & Assessment Service).

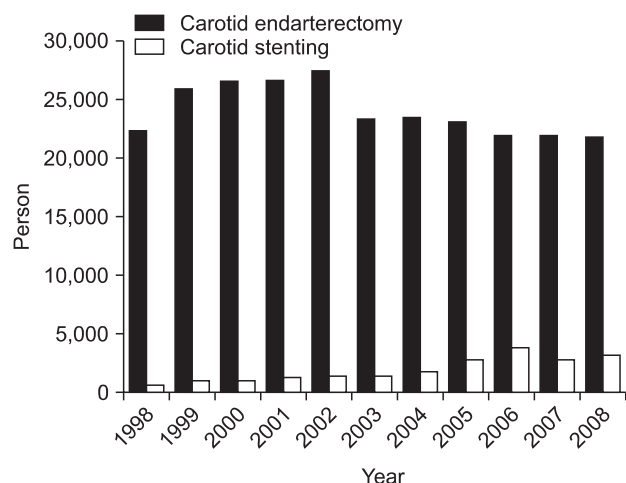


Fig. 5. The number of carotid endarterectomy and carotid artery stenting procedures captured in the NIS years 1998–2008.

Modified from the article of Dumont and Rughani (J Neurosurg 2012;116:1251–1257) [6].

that 76% of all strokes were attributed to ischemic stroke and 36% of them to large artery atherosclerosis [7].

According to our previous investigations of asymptomatic carotid stenosis in patients undergoing leg bypasses due to chronic atherosclerotic occlusive disease, 14% of patients showed critical ($\geq 70\%$) ICA stenosis and 7% showed total occlusion of the ICA [8].

Considering the above described information and that the aged (≥ 65 years) population is currently over 5.5 million, the 2,500 carotid interventions including CEA and CAS that are being performed in a year seem to be much lower than the expected number of carotid interventions

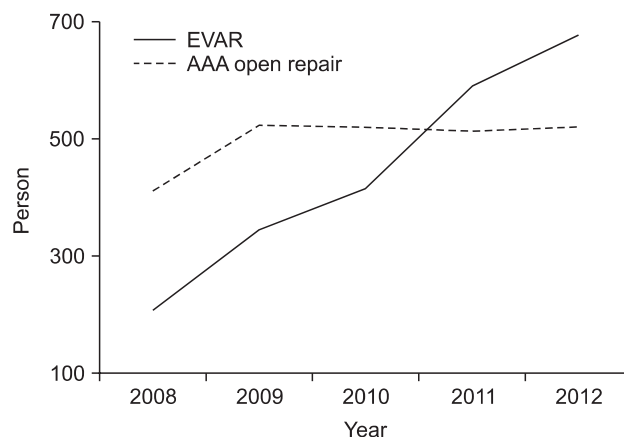


Fig. 6. Number of abdominal aortic aneurysm (AAA) patients who underwent open or endovascular aneurysm repair (EVAR) in Korea (Health Insurance Review & Assessment Service).

that should be performed in Korea.

In our recent review of early results of CEA and CAS which was performed in Samsung Medical Center, Seoul, CAS showed significantly higher rates of symptomatic (CAS 9% vs. CEA 3.2%, $P=0.007$) and asymptomatic (CAS 7.2% vs. CEA 2.2%, $P=0.002$) neurologic complications in the early postoperative period (<30 days) [9].

Updated SVS guidelines in 2011 also recommended CEA as the first line treatment for most symptomatic carotid stenosis of 50%–99% and asymptomatic carotid stenosis of 60%–99%. CAS is not recommended for asymptomatic patients, while it should be reserved for symptomatic patients with carotid stenosis of 50%–99% at a high risk for CEA due to anatomic or medical reasons [10].

Here, I would like to say to all KSVS members that it is our responsibility to correct the indiscreet use of CAS and take an initiative in treating carotid diseases in this country. To achieve this goal, collaboration with other specialists who are involved in the treatment of carotid disease is important.

Abdominal aortic aneurysm (AAA) has known to be less prevalent in the Asian population compared to western people. So far, we don't have a population-based data of the prevalence of AAA in Korea. According to a report from our institution, AAAs were detected in 0.5% (27/4,939) of Korean adults (age, 60.7 ± 13.2 years; male 48%) during annual health check-up [11].

Even though this figure is not from a population-based study, we can see much lower prevalence of AAA in Korean adults compared to western adults. Though the reported number of AAA patients who underwent open or endovascular repair is increasing with increasing number of endovascular aneurysm repairs (EVARs) in Korea (Fig. 6), I still think there might be many undetected AAA

Table 1. SWOT analysis of current status of vascular surgery in Korea

Analysis point	Korean Society for Vascular Surgery
S (Strength)	Increasing patient pool Increasing public concerns for vascular diseases
W (Weakness)	Low cost of vascular surgery fee compared to other surgical procedures Absence of an official training program for vascular surgery Institutional constraints by government-run health insurance system Increased turf fighting
O (Opportunity)	Undetected patient pool Can do both open and endovascular surgery Chance to take an initiative in total care of patients with multiple-site arterial diseases
T (Threat)	Decreasing number of applicants for vascular surgery Hospitals reluctant to invest for vascular surgery due to low surgical cost

patients in this country. Due to a belated use of aortic endografts in 2008 (allowed by the notification No. 2008-57 of the Korean Ministry of Health and Welfare), we are a little behind in the clinical use of EVAR for treatment of AAA patients compared to other countries. The number of EVARs outnumbered open AAA repair since 2010. However, new devices such as branched or fenestrated aortic stent grafts are not yet allowed to be used by the government-run health insurance system in Korea. These institutional constraints seem to be a hindering factor to the progression of endovascular aortic surgery in Korea.

According to the US data, the annual number of EVARs has continuously increased whereas the number of open AAA repairs have not significantly decreased [12]. Furthermore, late complications of EVAR such as endograft infection or endoleaks which cannot be treated by endovascular means are increasingly reported these days. It means that open AAA surgery techniques should not be ignored by vascular surgeons.

The prevalence of chronic leg ischemia has also increased with increasing numbers of aged population in this country. I think the risk factors for atherosclerosis has changed in this country since 30 years ago. According to the 2012 Korean national health and nutrition survey, the number of smokers is decreasing in Korea but is still high (male 48.3%, female 6.3% in Korean adults >19 years of age) particularly in younger age groups. The prevalence of diabetes mellitus is around 11% in male and 8.3% in female Korean adults (older than 30 years of age) [13]. According to this report, the lifestyle of Korean people is becoming westernized, physical activity has decreased whereas prevalence of hyperlipidemia has increased compared to the past.

In treating leg ischemia patients, endovascular treatment has become the first-line therapy at many hospitals even though leg artery bypass has been settled as a popular treatment option in Korea. In addition to interventional radiologists, many vascular surgeons and interventional

cardiologists are actively involved in the endovascular treatment of the leg ischemia these days. In choosing a proper treatment option for patients with chronic leg ischemia, there have been long debates between leg bypass and endovascular intervention. The follow-up report of the BASIL (bypass versus angioplasty in severe ischemia of the leg) trial [14] recommended bypass surgery as the first line treatment for patients with severe leg ischemia and with expected survival ≥ 2 years. In an era of endovascular surgery, it is natural for vascular surgeons to perform both open surgery and endovascular technique or even hybrid surgery when it is required. Indiscreet use of endovascular procedures under obscure indications should be restrained. KSVS has a responsibility to control and monitor endovascular procedures and to provide a learning opportunity for its members to improve endovascular skills.

In my personal view, the role of endovascular treatment is critical in the treatment of chronic leg ischemia particularly for patients with high surgical risk and relatively short arterial lesion ie, Trans-Atlantic Societies Consensus (TASC) type A, B and some of type C. When long-term efficacy of the treatment is required and patients have good surgical risk and good quality saphenous vein, I would like to recommend leg bypass using autogenous vein graft for the patient. A non-invasive or less invasive treatment has strong advantages over a painful and invasive treatment, however these advantages of the former cannot always replace a long-term efficacy of the latter.

In addition to these problems in our professional area, we have many challenging issues to overcome including turf fighting with other specialties, low operation reimbursement fee of vascular surgery under the government-run health insurance system, institutional constraints in the use of new devices or new procedures, absence of an official training program for vascular surgery in Korea etc. I summarize the current status of KSVS in Table 1 with a SWOT analysis (Table 1).

Table 2. Comparison between operation fees of common surgical procedures in Korea and Medicare surgical fees in Washington state in USA

Surgical procedure	In Korea ^a (USD)	Medicare cost in US ^b (USD)
Carotid endarterectomy		
Primary closure	416	1,096
Patch closure	455	1,096
A-V fistula	250	719
A-V graft	250	679
Lap. cholecystectomy	287	663
Radical mastectomy	628	1,203
Radical subtotal gastrectomy	677	2,268
Fem-fem bypass	358	1,139
Fem-AK pop bypass		
Vein graft	420	1,468
Prosthetic graft	390	1,135
SFA stenting	679	518
Fem-BK pop bypass		
Vein graft	464	1,468
Prosthetic graft	434	1,135
AAA open repair		
Tube graft	544	1,829
Bifurcated graft	605	1,975
EVAR		
Aorto-biiliac	969	1,288
Aorto-aortic	912	1,235

A-V, arteriovenous; Lap, laparoscopic; AK, above knee; SFA, superficial femoral artery; BK, below knee; AAA, abdominal aortic aneurysm; EVAR, endovascular aneurysm repair.

^aKorean Hospital Association, health insurance medical fee, 2013.

^bMedicare cost in Washington state in US, 2013.

Exchange rate, 1,076 Korean won per one US dollar.

Among these issues, I'd like to describe the operation fee issue first. Operation fee is one of the major factors in choosing his or her specialty for young surgeons. I dare to say that higher operation fees will make the status of KSVS better in the future. Table 2 shows a comparison between operation fees of common surgical procedures in Korea and Medicare surgical fees in one state in the US [15]. Operation fees of major arterial surgeries are exceptionally low in the current Korean Health Insurance system. As you can see in the table, operation fee for AAA open repair is lower than that of radical mastectomy, subtotal gastrectomy or even that of SFA stenting in Korea.

To my knowledge, Medicare surgical fees in the US differ from state to state and are usually very low compared to private insurance surgical fees. KSVS has to try to correct the low operation fees in vascular surgery, which was decided based on the under-estimated workload of vascular surgeons and misunderstanding of vascular surgery in Korea 30 years ago.

The second thing that I'd like to suggest is that we need an officially accredited training program for vascular surgery in Korea. Currently, several hospitals run their own fellowship training programs. However, the training program was not assessed by KSVS or the Korean Surgical Society. For the further progression of vascular surgery in Korea, the importance of an accrediting program cannot be overemphasized.

Thirdly, we have to keep our eyes wide open to find hidden or overlooked patients with vascular diseases. This can lead to promoted health status of all Koreans and reduce medical expenses in the long run by reducing expenses for patients with unanticipated disaster due to vascular disease. This can be achieved by public education of vascular disease or campaigning of vascular surgery to the public.

Fourthly, we should try to catch up with the rapid advancement of medical science in endovascular surgery. As a late comer to a certain town, it is not strange for one to ask the townspeople for directions to one's destination. I think all KSVS members are ready to learn more about advanced or new vascular and endovascular technology. There will be no progression of KSVS without change.

Lastly, I would like to close my presidential address by stressing 3 important attitudes for medical students and young doctors who want to become a good surgeon. I call it "surgeon's 3Ds" which are *Diligent*, *Dedicated* and *Decisive*.

Thirty years is not a short period of time since the foundation of KSVS. I really appreciate again the pioneer surgeons' endeavor to build up KSVS as an established medical society under the hard circumstances. Now it is our responsibility to make KSVS a better academic society. Once again, I appreciate all board members of KSVS who helped me during my term.

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