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

Young-Wook Kim
President of KSVS (2012-2013)
Professor of Surgery, Sungkyunkwan University School of Medicine,
Division of Vascular Surgery, Department of Surgery, Samsung Medical Center, Seoul, Korea

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].
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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 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. 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
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 (≥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 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
patients in this country. Due to a belated use of aortic
dografts 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]. Fur-
thermore, late complications of EVAR such as endograft
infection or endoleaks which cannot be treated by endo-
vascular 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 particu-
larly 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 in-
vasive 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 reim-
bursement 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 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 |
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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REFERENCES

1) Statistics Korea. Population projects for Korea: The 2010 Revision. Daejeon: Statistic Korea; 2011. p.34.
2) Statistics Korea. Population projects for Korea: The 2005 Revision. Daejeon: Statistic Korea; 2006. p.52.
3) Statistics Korea. Cause of death in Korea in 2012, 2013. Daejeon: Statistic Korea; 2013.
4) Health Insurance Review & Assessment Service. 2012 Quality assessment of acute stroke report: The 2011 Revision. Seoul: Health Insurance Review & Assessment Service; 2012.
5) Health Insurance Review & Assessment Service. Recent trend in treatment of carotid artery stenosis in Korea in 2008-2012. Seoul: Health Insurance Review & Assessment Service.
6) Dumont TM, Rughani AI. National trends in carotid artery revascularization surgery. J Neurosurg 2012;116:1251-1257.
7) Hong KS, Band OY, Kang DW, Yu KH, Bae HJ, Lee JS, et al. Stroke Statistics in Korea: part I. epidemiology and risk factors: a reports from the Korea Stroke Society and Clinical Research Center for Stroke. J Stroke 2013;15:2-20.
8) Yun WS, Rho YN, Park UJ, Lee KB, Kim DI, Kim YW. Prevalence of asymptomatic critical carotid artery stenosis in Korean patients with chronic atherosclerotic lower extremity ischemia: is a screening carotid duplex ultrasonography worthwhile? J Korean Med Sci 2010;25:1167-1170.
9) Yang SS, Kim YW, Kim DI, Kim KH, Jeon P, Kim GM, et al. Impact of contralateral carotid or vertebral artery occlusion in patients undergoing carotid endarterectomy or carotid artery stenting. J Vasc Surg 2014;59:749-755.
10) Ricotta JJ, Aburahma A, Ascher E, Eskandari M, Faries P, Lal BK; Society for Vascular Surgery. Updated Society for Vascular Surgery guidelines for management of extracranial carotid disease: executive summary. J Vasc Surg 2011;54:832-836.
11) Oh SH, Chang SA, Jang SY, Park SJ, Choi JO, Lee SC, et al. Routine screening for abdominal aortic aneurysm during clinical transthoracic echocardiography in a Korean population. Echocardiography 2010;27:1182-1187.
12) Health Insurance Review & Assessment Service. Number of AAA patients who underwent open or endovascular repair. Seoul: Health Insurance Review & Assessment Service.
13) Hong KS, Bang OY, Kang DW, Yu KH, Bae HJ, Lee JS, et al. Stroke Statistics in Korea: part I. epidemiology and risk factors: a reports from the Korea Stroke Society and Clinical Research Center for stroke. J Stroke 2013;15:2-20.
14) Bradbury AW, Adam DJ, Bell J, Forbes JF, Fowkes FG, Gillespie I, et al; BASIL trial Participants. Bypass versus Angioplasty in Severe Ischaemia of the Leg (BASIL) trial: An intention-to-treat analysis of amputation-free and overall survival in patients randomized to a bypass surgery-first or a balloon angioplasty-first revascularization strategy. J Vasc Surg 2010;51(5 Suppl): 5S-17S.
15) Korean Hospital Association. Korean Hospital Association, health insurance medical fee, 2013. Seoul: Korean Hospital Association.