นิพนธ์ต้นฉบับ • Original Article

หลอดเลือดแดงโป่งพองหลายแห่งในศพดองหนึ่งรายของคนไทยอีสาน

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A Case of Multiple Aneurysms in Northeast Thailand Embalmed Cadaver

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หลักการและเหตุผล: หลอดเลือดแดงโป่งพอง ที่เหลือให้เห็นเป็นรอยโรคให้ได้เรียนในห้องปฏิบัติการมหกายวิภาคศาสตร์นั้นหาได้ยาก ในประวัติศาสตร์ 34 ปีของคณะแพทยศาสตร์ มหาวิทยาลัยขอนแก่น ได้พบเป็นรายแรกในปี 2550 เพียง 1 ราย จากจำนวนทั้งหมด 843 ราย ทางโรงพยาบาลศรีนครินทร์ได้รักษาผู้ป่วยด้วยโรคนี้อยู่เสมอ

วัตถุประสงค์: เพื่อเป็นพื้นฐานในการประยุกต์ใช้ในระดับคลินิก เพื่อกระตุ้นความสนใจของนักศึกษาแพทย์ ให้สนใจศึกษาวิชามหกายวิภาค ใช้เป็นพื้นฐานในการแก้ปัญหาโรคนี้ตั้งแต่ต้นๆ ของอาชีพแพทย์

วัสดุและวิธีการ: ทำการชำแหละศพดองตามวิธีการมาตรฐาน จำนวน 843 ราย เพศหญิง 371 ราย อายุระหว่าง 21-92 ปี เพศชาย 472 ราย อายุระหว่าง 38-88 ปี เป็นเวลา 34 ปี ถึงปีการศึกษา 2550 ที่ภาควิชากายวิภาคศาสตร์ คณะแพทยศาสตร์ มหาวิทยาลัยขอนแก่น

ผลการศึกษา: ได้พบหลอดเลือดแดงโป่งพอง ในศพดอง เพศชาย อาย 65 ปี จำนวน 3 แห่ง คือ 1) หลอดเลือดแดง พอพ-พลี-เตียล ข้างขวา 2) หลอดเลือดแดง อินเท้อร์นัล อิ๊ลิแอค ข้างขวา และ 3) หลอดเลือดแดง ค้อมมอน-อิ๊ลิแอค ข้างซ้าย

สรุป: การพบรอยโรคหลอดเลือดแดงโป่งพอง ในห้องปฏิบัติการวิชามหกายวิภาคศาสตร์ นับเป็นเรื่องที่น่าตื่นเต้นมากสำหรับนักศึกษาแพทย์และอาจารย์กายวิภาคที่จะนำไปสู่การกระตุ้นให้เกิดความสนใจ แล้วเริ่มคิดในแง่การประยุกต์ใช้กับผู้ป่วย ทำให้การเรียนการสอนมีประสิทธิภาพยิ่งขึ้นด้วย รอยโรคอื่นๆ ในศพดองก็จะมีประโยชน์ทำนองเดียวกันนี้ด้วย เราได้อธิบายถึงสาเหตุของการเกิดโรคนี้ไว้ด้วย

คำสำคัญ: หลอดเลือดแดงโป่งพอง, คนไทยอีสาน, สาเหตุ

Background: Aneurysms left in the cadaver has been difficult to find in our experiences, during 34 years from the establishment of Khon Kaen University Medical School. We witnessed the first case of multiple aneurysms in 2007 in the male cadaver out of 843 of both gender specimens. We always have diagnosed and treated the patients now and then in our teaching hospital, Srinagarind.

Purpose

1) To record the basic data for clinical management of aneurysm.

2) To stimulate the interests of the medical students to make them pay more attention to gross anatomy as it is the basis for tackling the aneurysm problem early in the medical career.

Materials & Methods: We redissected 843 cadavers after the standard procedure. They were 371 females aged between 21-92 years and 472 males between 38-88 years old at the time of death. The work was accomplished in the KKU Dept. Anat. dissecting room and from 1973-2007.

Results: We found 3 aneurysms in one male cadaver aged 65 years, They were, 1) right popliteal aneurysm, 2) right internal iliac aneurysm, and 3) left common iliac aneurysm

Conclusion: The gross lesion of aneurysm seen in the dissecting room is very exciting for the medical students and the anatomists which leads to the stimulation of the students' interests. This leads further to the thoughts for the application in the patients. This also enhances the teaching and learning process. The other morbid anatomy

in the cadaver will surely serve the same objective. The etiology was discussed.

Key words: aneurysm, Northeast Thailand, etiology

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Background/Rationale

It is always a livening experience for the doctors-to-be and the anatomists alike to witness to the pathology of any structure of the cadavers. The aneurysm, a sac communicated with the lumen of an artery (Ellis and Calne, 1987)[1] is no exception. Although the surgeons of KKU Srinagarind Hospital have managed the cases, but this was the first case in 34 years of Northeast Thailand cadavers dissection. The survey goes back as for as the year 1963 when Henry[2], the surgeon of New York Veterans Administration Hospital treated the case of 37-year-old Negro man successfully.

The authors are reporting the case of 65-year-old Northeast Thai with multiple aneurysms; he died of cerebral vascular accident (CVA). Awareness of aneurysm early in the dissecting room would motivate the medical students appropriately.

Objectives

To report a case of multiple aneurysm and to begin the prevalence rate collection on this morbid gross anatomy.

Design

The classically careful dissection of cadavers for descriptive study design.

Materials & Methods

The authors redissected 843 cadavers, 371 females and 472 males age ranged 21-93 years and 38-88 years respectively.

Setting

Gross Anatomy Laboratory, Department of Anatomy, Faculty of Medicine, Khon Kaen University, Khon Kaen 40002, Thailand.

Results

The authors observed a fusiform aneurysm of the right popliteal artery measured 50 mm. long with 30 mm. diameter. The wall was cut open and the dry clot removed. The aneurysm wall was a thickened tunica adventitia while the other layers remain at the ends, proximal and distal, encircling the lumen of the popliteal artery. (Fig 1, 2, 3)

Just distal to the abdominal aorta bifurcation, 2 more aneurysms were observed, a) the right internal iliac aneurysm, and b) the left common iliac aneurysm (Fig 4). Each of them was fusiform with the same size as that of the popliteal aneurysm.

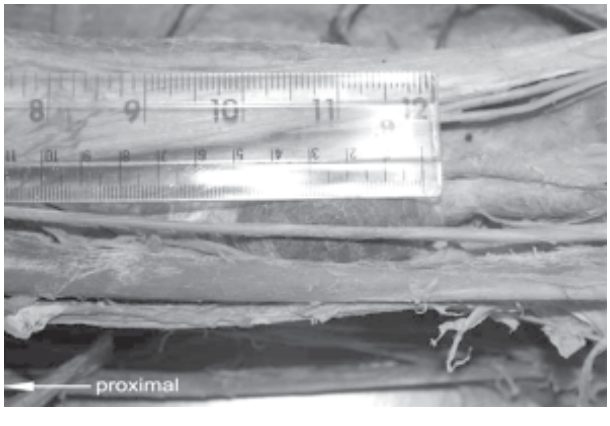

Figure 1. Right popliteal aneurysm, 5 cm long and 5 cm in diameter

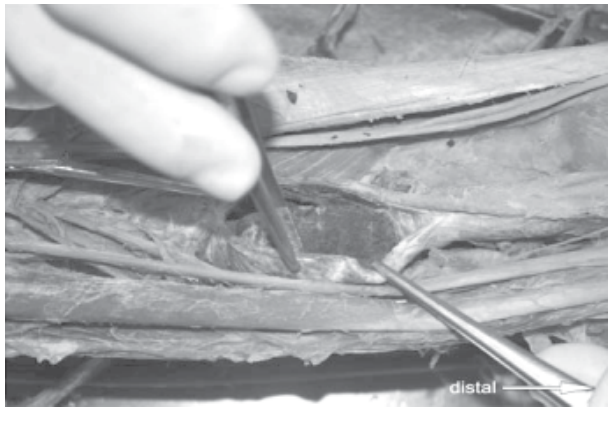

Figure 2. Right popliteal aneurysm, the colt was exposed

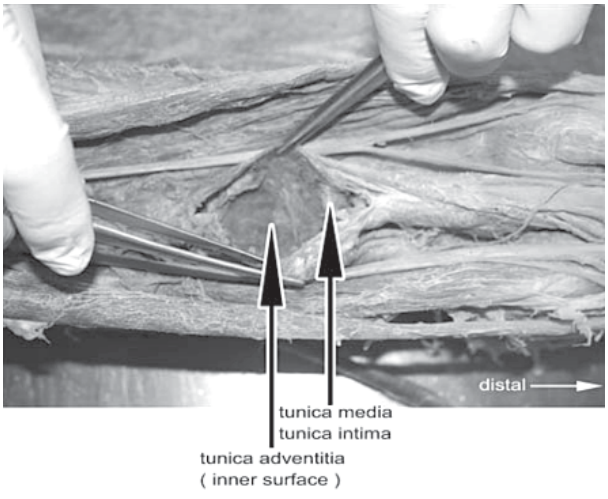

Figure 3. Illustrates the inner surface of aneurysm wall

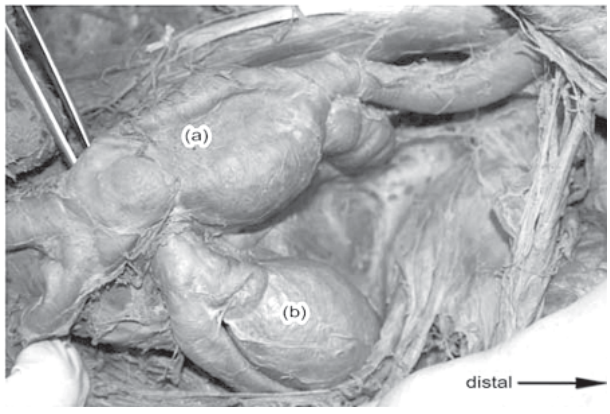

Figure 4. Left common iliac aneurysm (a)
Right internal iliac aneurysm (b)

Discussion

All three aneurysms reported here are classified as true type and fusiform in shape. Different locations in the same body for these morbid anatomy caused similar aneurysm, at least common shape and size. The attempt to set the standard for reporting the size of the abdominal aortic aneurysm was made by the UK Society for Vascular Surgery in 1991 together with the International Society for Cardiovascular Surgery. Since all of the reported aneurysms herein are fusiform, the whole circumference is affected. This is illustrated in Figures 3 and 4. The authors have no idea about the rate of development and the time of onset of these aneurysms.

As for the etiology and risk factors are concerned, it has long been traditionally believed that trauma, acute infection (brucellosis, salmonellosis), chronic infection (tuberculosis), and inflammatory diseases contribute to the pathogenesis leading to aneurysm[3]. Henry[2] proposed a possible etiology of aneurysm to be a congenital defect in the wall of the artery. This was proved by histochemical staining for elastic fibers, a complete loss of elastic fibers in the aneurismal portion was observed. Defawe and colleagues4 were able to show that two protease inhibitors, TIMP-2 and PAI-1, were expressed less in abdominal aortic aneurysms than in athero-occlusive disease. This suggested the genetic factor involvement in the pathogenesis of the abdominal aortic aneurysm. The multinational study indentified 233 families with 653 affected members[5]; the inheritance mode was autosomal recessive in 72% of families and autosomal dominant in 25% of families. A linkage between aortic aneurysm growth and a 4G/5G polymorphism in the plasminogen activator inhibitor (PAI-1) promoter has been recorded[6], and Jones et al[7]. The linkage of the frequency of abdominal aortic aneurysm to a locus on chromosome 19 q 13 was also reported[8]. Several candidate genes are present in this region of chromosome 19, such as LDL receptor related protein 3 (LRP3). This is particularly relevant because conditional knockout mice for LRP1, a member of this gene family, developed atherosclerosis and arterial aneurysm[9]. Our case of the right popliteal aneurysm, right internal iliac aneurysm, and left common iliac aneurysm, reported occurred in the peripheral large-sized arteries. There was a study in 108 healthy people on the properties of the wall of popliteal artery that proved to be similar to the wall of the aorta[10]. This might have implications for susceptibility to arterial dilation. The possible cause and mechanism of abdominal aortic aneurysm development, therefore, could be applied to the occurrence of aneurysms peripherally. The popliteal aneurysms were the most prevalent among peripheral muscular arteries which were reported by Lawrence et al[11]. The incidence ratio of iliac aneurysm to the popliteal aneurysm from 5-year record (1987-1992) of Utah Hospital Associations was 156:238 whereas the whole USA was 8,729:10,773.

Conclusion

It took the physicians and/or surgeons 5 decades and a great number of researchers and a lot of money to learn and understand the etiology, clinical diagnosis and features of aneurysms, and its management to a certain level[3]. Gifford and coworkers as quoted by Wychulis[12] diagnosed and treated 100 popliteal aneurysms between 1913 and 1951 and found that 23 patients were treated non-surgically which ended in amputation. The circumstance of the incidence of aneurysms in Thailand is similar to that in the developed countries, all the cases were collected from the patients. Once in 34 years that we found a case of multiple aneurysms in a 65-year-old man of the Northeast Thailand.

There have been a good number of physician and surgeon researchers around the world work in this interesting field of aneurysm. We would be exciting in the upcoming years when the human genetic engineering reach the point where they find the specific genes that are expressing consistently enough to protect the molecular pathogenesis of aneurysm from occurrence.

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