

ными артериями и подлежащим миокардом является то, что сосуды как бы фиксированы к мышце сердца посредством мышечных перемычек в виде мостиков и петель. Мышечные петли охватывают коронарные артерии до трех четвертей их окружностей в венечных бороздах. Редко коронарные артерии имеют интрамуральный ход и окружены миокардом желудочков, который и образуют так называемые мышечные «мостики».

В систематизации аномалий коронарных артерий последние оценивались с позиций закономерности их отхождения, следования, ветвления и распределения. Эктопия устьев коронарных артерий в горизонтальной плоскости («транслокация») выявлена в 2 сердцах в сочетании МАС, вертикальная эктопия устьев также выявлена в 2 случаях с МАС. Вертикальная эктопия представляла приподнятость устья коронарной артерии выше линии синотубулярного соединения. В 2 сердцах мужчин в левом коронарном синусе имелось единственное устье коронарной артерии. Формирование единственной коронарной артерии может быть обусловлено горизонтальной «транслокацией» устья, отсутствием одной из них, аномальным отхождением правой или левой коронарной артерии и т.д. В 4 сердцах с МАС выявлено глубокое интрамуральное следование коронарных артерий (по 2 случая мышечных «мостиков» правой и левой коронарной артерии).

Наши исследования показали, что аномалии хордальных нитей выявляются в 16,2 % случаев в правом

предсердии, правом и левом желудочках. Встречаемость АРХ в правых отделах сердца – в 2 раза реже, чем в левых. К редким аномалиям относятся хорды, располагающиеся в правом предсердии. Они встретились в 3 случаях вдоль задней стенки предсердия: в 2 случаях тяж располагался параллельно току крови, в 1 - перпендикулярно. Часто аномальные хорды располагаются между двумя внутрисердечными образованиями и имеют две точки прикрепления. Редко аномальные хорды имеют перепончатую структуру на концах, прикрепляются к трем и более образованиям.

В заключительном диагнозе в составе основного заболевания редкие МАС занимали место в 12 случаях, в составе фонового – в 10 случаях, как сопутствующая патология фигурировали в 23 случаях.

Таким образом, результаты аутопсии показали, что редкие МАС встречаются у мужчин и женщин всех возрастных групп, умерших от разных причин. Отклонения развития часто проявляются аномалиями клапанов, положения коронарных артерий, дополнительными образованиями в камерах сердца. Анатомические особенности аномалий обуславливают их участие в патогенезе заболеваний и танатогенезе, однако, при жизни пациентов они остаются не распознанными. Распознавание строения и топографии редких МАС, их влияния на развитие патологических синдромов является важным для врачей различных специальностей.

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THE CLINICAL AND ANATOMIC CHARACTERISTIC RARE SMALL ANOMALIES OF HEART

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ABSTRACT:

Results autopsy researches of rare small anomalies of the heart meeting in 7,79 % of cases at died all age groups from the different reasons are resulted. Lifetime diagnostics of small anomalies of heart has not been spent, however their participation in patogenesis and thanatogenesis did not cause doubts as in 12 and 10 cases from 45 they took a place as a part of the basic and background diagnosis.

Keywords:

small anomalies of heart, displasya a connecting tissues, autopsy

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COMPARTMENT SYNDROME AND ITS TREATMENT IN PERIPHERAL ARTERIAL TRAUMA

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Abstract:

Introduction: In each case with important peripheral vascular injury one of the crucial problems to be solved is the installation of the compartment syndrome.

Material and methods: From August 1999 till March 2005 we treated 77 patients with important arterial injuries of the limbs. The range in age was from 13 to 65 years old. In 62 patients the injury was in lower limbs, in 15 the injury was in upper ones. The injuries were causalities of shotguns in 55 cases, knives and other sharp objects in 17 cases, road incidents in 4 cases and iatrogenic 2 cases.

We performed fasciotomy in 29 cases. All of them in the legs. In the cases we performed fasciotomy complexity of trauma was 93%. The rest of cases had a complexity of 15%. Mean time of admission in our department from the moment of trauma was 16.5 hours in fasciotomy group and 6.5 hours in non fasciotomy group.

In the cases with fasciotomy revascularization procedures have been performed in 85% of patients. Whereas in the cases without fasciotomy revascularization procedures were performed in 100% of cases.

Results: In the cases treated with fasciotomy 26 patients did well versus 32 in non fasciotomy group. Amputation in different levels were performed in three cases in fasciotomy group and one in the other group. Neuropathy was installed in 2 patients with fasciotomy versus 1 patient without fasciotomy. Muscular necrosis suffered 3 patients with fasciotomy. Mean duration of stay in hospital was 19 days in the group with fasciotomy and 10 days in the group without.

Conclusions: Fasciotomy should be performed as soon as possible in all cases where a compartment syndrome is installed.

Key words:

arterial trauma; fasciotomy; ischemia sequels

Introduction:

Trauma is one of major causes of death in our hospital . The patients generally belong the age till fourth decade of life . They had penetrated and blunt vascular trauma injuries. In developed countries the causes of injury usually are road accidents and invasive diagnostic and therapeutic procedures [20,21,22] .

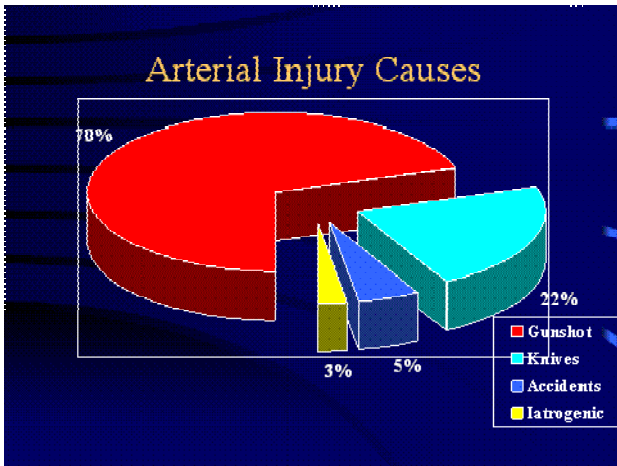
In our hospital in 92 % of patients the injury is been due to aggression of the person ; 5 % are due to road accidents and 3 % iatrogenic ones . Most of the patients have been injured by military weapons , which have high kinetic energy causing massive damage of tissues [17,18,19] . In all cases that a major vascular injury is present the surgical team should be alert of compartment syndrome [2,3,11] .

Material and Methods:

We studied 77 patients with vascular limb injuries during August 1999 – March 2005 .In the study are included patients with major vascular injuries of the limbs and are excluded those with not important vascular injuries . In other words those with injuries that do not threaten the limb viability .

In our cases 72 were males , 5 females . The age of patients rated 13 - 65 years old [medium 28,9 years old] . In 62 patients the injury is been in inferior limbs and 15 in superior ones .

The cause of injury was [Graphic 1]:



Graphic 1

- a - 54 cases by shot guns.
- b - 17 cases by sharp weapons.
- c - 4 cases by road accidents.
- d - 2 cases iatrogenic injuries.

We performed fasciotomy in 29 cases. All of them belong to inferior limbs. Fasciotomy was done when compartment syndrome was installed [1,3,4]. 33 patients were treated without fasciotomy[8] , 5 of them were complex trauma.

In the cases where fasciotomy was done the injury belonged to the artery alone [2 cases] ; artery and vein [20 cases] ; vascular injury and fracture [7 cases] .

The study has a retrospective analytic character .We compared:

- 1 – The final result.
- 2 – Complications.
- 3 – Complexity.
- 4 – Duration of stay in hospital.

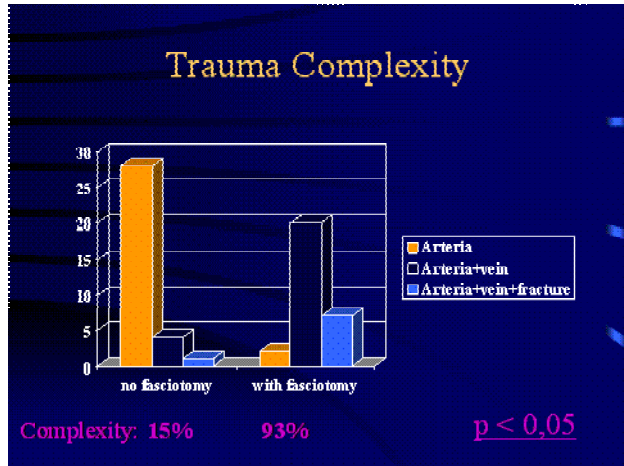
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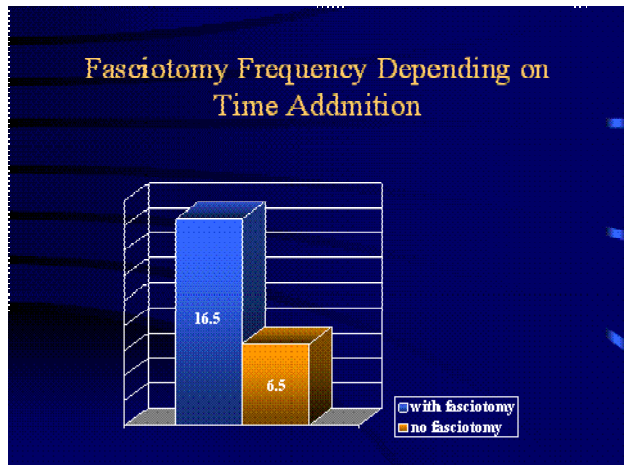
The statistical test used is of Mann – Whitney.

Results:

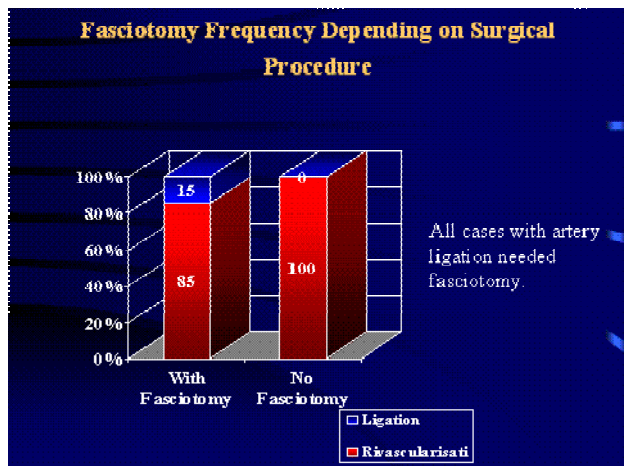
An important component in vascular trauma is the complexity of injury [15,16] . In 38 , 9 % of our cases the injury belonged the arterial system . In 61 , 1 % there was combined injuries. From them 72 , 3 % was injured the arterial and venous systems . In 21 , 3 % there was an artery and a bone fracture. In 6 , 4 % the injury belonged to arterial and muscle –skeletal systems [See graphic 2] .



Graphic 2



Graphic 3



Graphic 4

If we will evaluate cases treated with and without fasciotomy we will see that cases treated with fasciotomy stayed longer in hospital than those treated without. From the other side if will compare the arrival hospital time, the complexity of injury and the kind of surgical procedure performed, the definition will come that in cases treated with fasciotomy were more complex, they reached late in the trained medical centre and in 85 % of revascularization surgical intervention was performed [See Graphics 2;3;4].

In the cases where fasciotomy is been done our surgical choice was lateral and medial fasciotomy with long incisions [9,10,11] [See Figures 1 and 2].

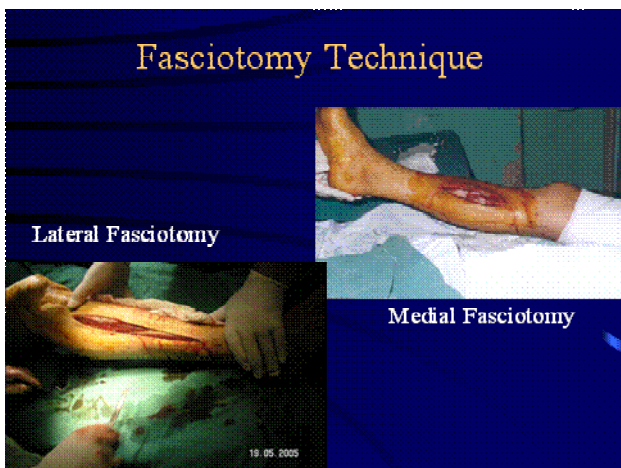


Figure 1

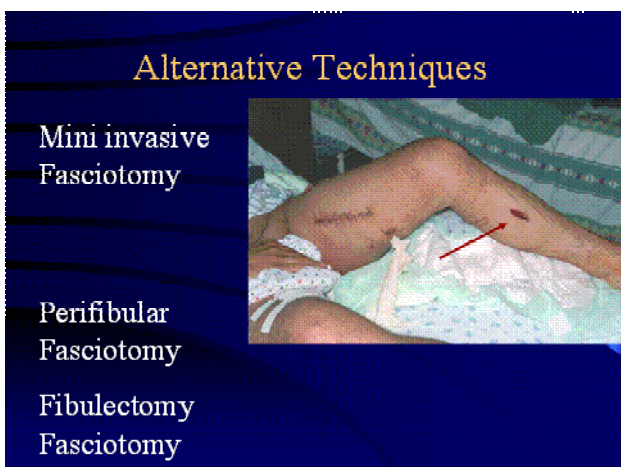


Figure 2

Results and Complications

	No fasciotomy	With fasciotomy
Positive Result	32 (96,96 %)	26 (89,65 %)
Amputation	1 (3,04 %)	3 (10,34 %)
Neuropathy	1 (3,04 %)	2 (2,5 %)
Tissue Necrosis	0	3 (3,7 %)

$p > 0,05$
No significance

Table 1

In the table 1 there are indicated results in both groups. With not favorable result we considered each case were any kind of amputation was performed.

In all cases with a muscle necrosis, the first signs of ischemia and necrosis appeared in the anterior muscle compartment of lower limbs.

In one of the amputated case the revascularization procedure was done 14 hours after the event. In other 3 cases the amputation is performed after fasciotomy was done. Fasciotomy closure was done in a period of time varied 5 - 40 days. This happened due to degree of infection and muscle necrosis.

The median hospital stay for patients treated with fasciotomy was 19 days. In the other group the median hospital stay was 10 days.

Discussion:

We used Mann - Whitney statistical test. Based on the test there was a significant difference [$p < 0.05$] belonging the complexity of trauma in the fasciotomy and without fasciotomy groups.

There by the amputation rate in the fasciotomy group should have been statistically significant. In fact it resulted that the amputation rate between both groups was comparable.

Also significant difference was between groups belonging duration of stay in hospital. We saw that in the amputated cases there were complex injuries, the arrival time in hospital was late [20 - 36 hours], surgical procedure was ligature of the artery.

In the results optic we think that fasciotomy is very important in the cases where it is indicated, independently from the fact it usually is followed by longer hospital stay [12,13,14].

According to muscle necrosis and neuropathy we believe that they are not complications of fasciotomy procedure, but results of delay in performing fasciotomy.

Conclusions:

1 - Fasciotomy is as well important as the revascularization procedure is, making it more effective and reducing sequels of compartment syndrome.

2 - Time, complexity and anatomic region that a peripheral arterial trauma is associated, are important predictor factors in the development of compartment syndrome.

3 - When compartment syndrome is installed long incisions should be done.

4 - The possibility of development of compartment syndrome in upper limbs is less than in the inferior ones.

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