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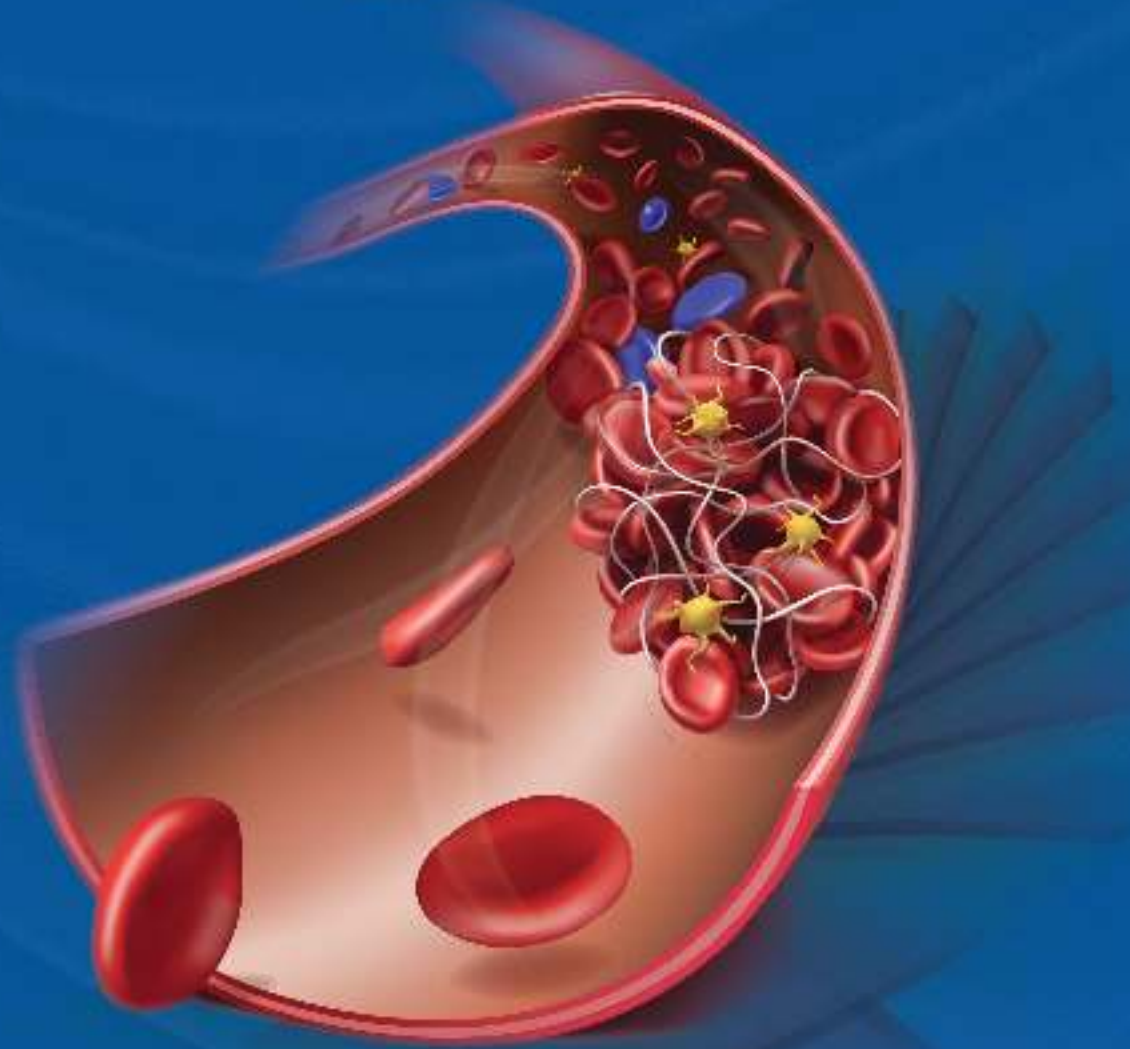

Management of primary varicose veins in pediatric age group

By

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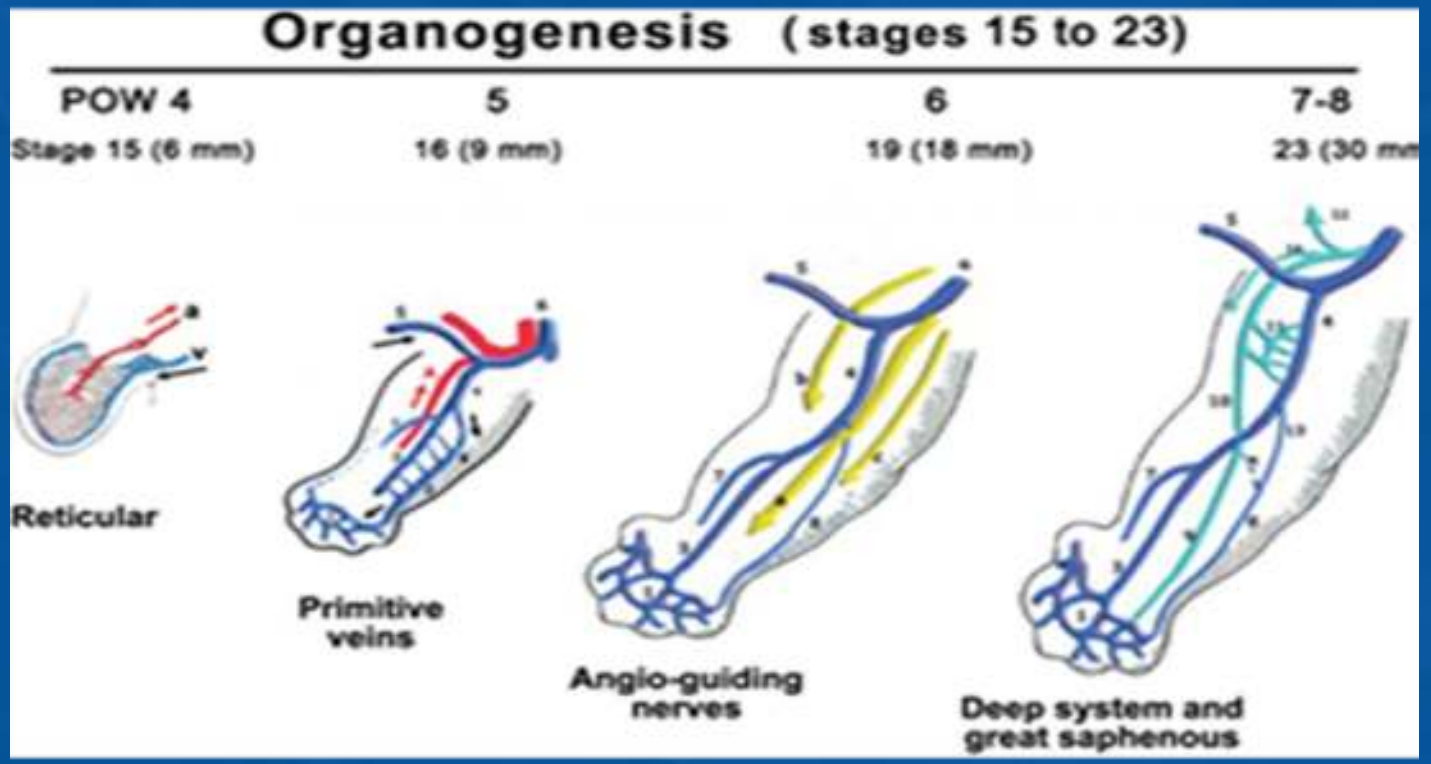
GOTHI

Our motivation for this study

limited studies for management of primary varicose vein in pediatric age group that makes us enthusiastic for work in this interesting group of patients.

Summary of the organogenesis period of an embryo's development (postovulatory weeks (POW) 4 to 8, Carnegie stages 15 to 23).



Kurobe N, Hakkakian L, et al. Surg Radiol Anat. 2015 April; 37(3):231-8.

Disorders, Genes, and Specific Mutations Associated With Varicose Vein Development

Conditions With Chromosomal Defects	Conditions With Gene Mutations or Defects	Single Nucleotide Polymorphism or Gene Mutation
Klippel-Trenaunay syndrome (translocation 8:14, 5:11)	Ehlers-Danlos syndrome (COL3A1 gene)	Thrombomodulin
Thrombomodulin Clonal trisomies (7, 12 and 18) or monosomies (14)	Chuvash polycythemia (Von-Hippel Lindau gene) Lymphoedema distichiasis (FOXC2 gene) Severe congenital neutropenia type 4 (G6PC3)	Notch3 mutation in pedigree of CADASIL (1279GT) Desmuslin

Muzaffar A Anwar, Kyrillos Georgiadis, et al. Circ Cardiovasc Genet. 2012 Aug; 5(4):460-6.

AIM OF THE STUDY

The aim of this work to study management and outcome of primary varicose vein in pediatric age group.

PATIENTS AND METHODS

50 children referred to the Vascular and Endovascular Surgery Department in Tanta University Hospitals included in study.

Our cutoff age was 18 years old.

PATIENTS AND METHODS

- Inclusion criteria

The study will include children 18 years old or younger with primary varicose veins.

- Exclusion criteria

1- Patients older than 18 years old.

2- Children with secondary varicose veins.

3- Children with congenital vascular malformation.

10 years old child with Rt lower limb 1ry varicose vein

14 years old child with left lower limb 1ry varicose vein

Pediatrics patients may be presented by dilated GSV as adult patients

Investigation

All patients will be evaluated by venous duplex to evaluate patency and competency of superficial and deep venous system.

All patients will evaluated according to venous clinical severity score (VCSS) pre and post intervention.

Procedures

Plane of management is determined according to type, distribution of varicosities and duplex finding.

Surgical:

Classical stripping

Stab avulsion of varicosities

Equipments:

1. Number 11 blade or 18-gauge needle.
2. Phlebotomy hooks (practitioner preference).
3. Hemostats.
4. 0.5-inch Steri-Strips.
5. Soft bandage.
6. Crepe bandage.

Injection sclerotheray:

Sclerosant foam was prepared by modified Tessari's method, who described the agitation of a mixture of sclerosant and air between two syringes as in easy foam kit

Endovenous ablation:

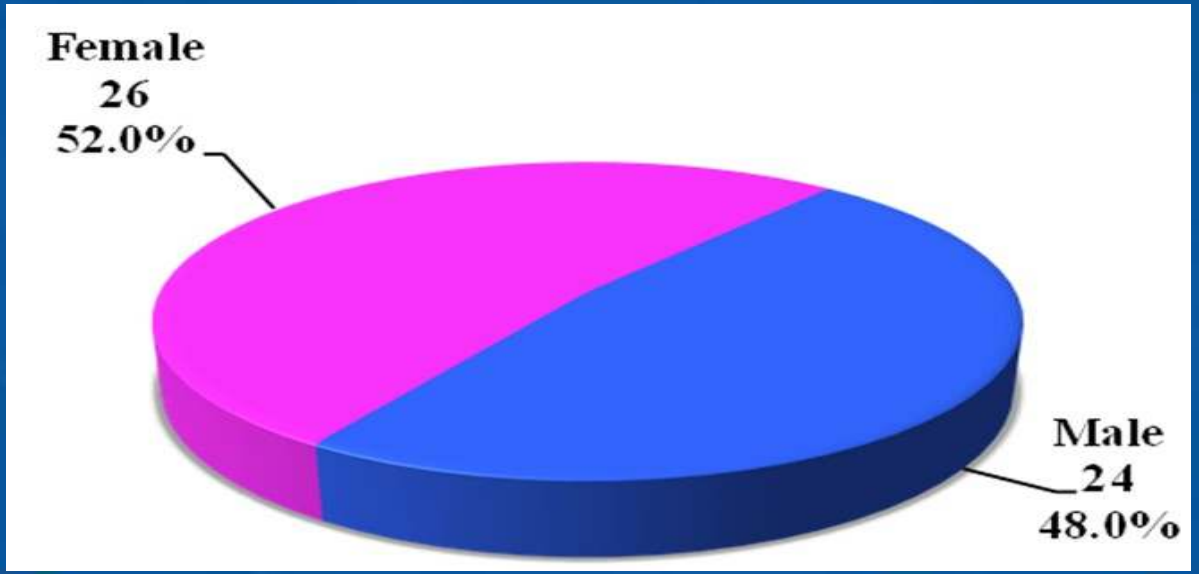
Management of varicose veins by ablation of GSV in pediatrics is the same in adult with respect to change in length of patient and nature of vein and subcutaneous fat so we must care with amount of tumescent applied to avoid skin burns.

RESULTS

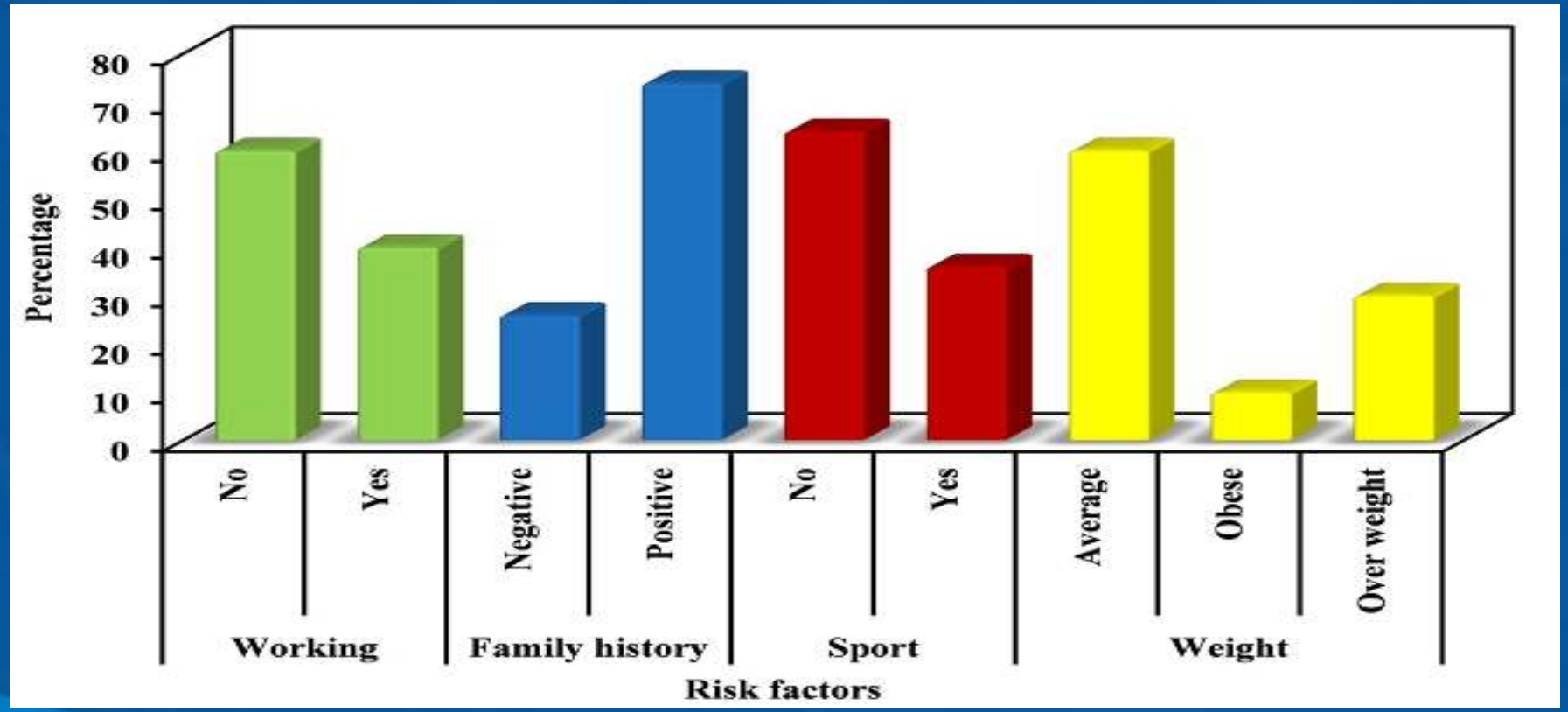
Patients' characteristics

Distribution of the studied cases according to demographic data

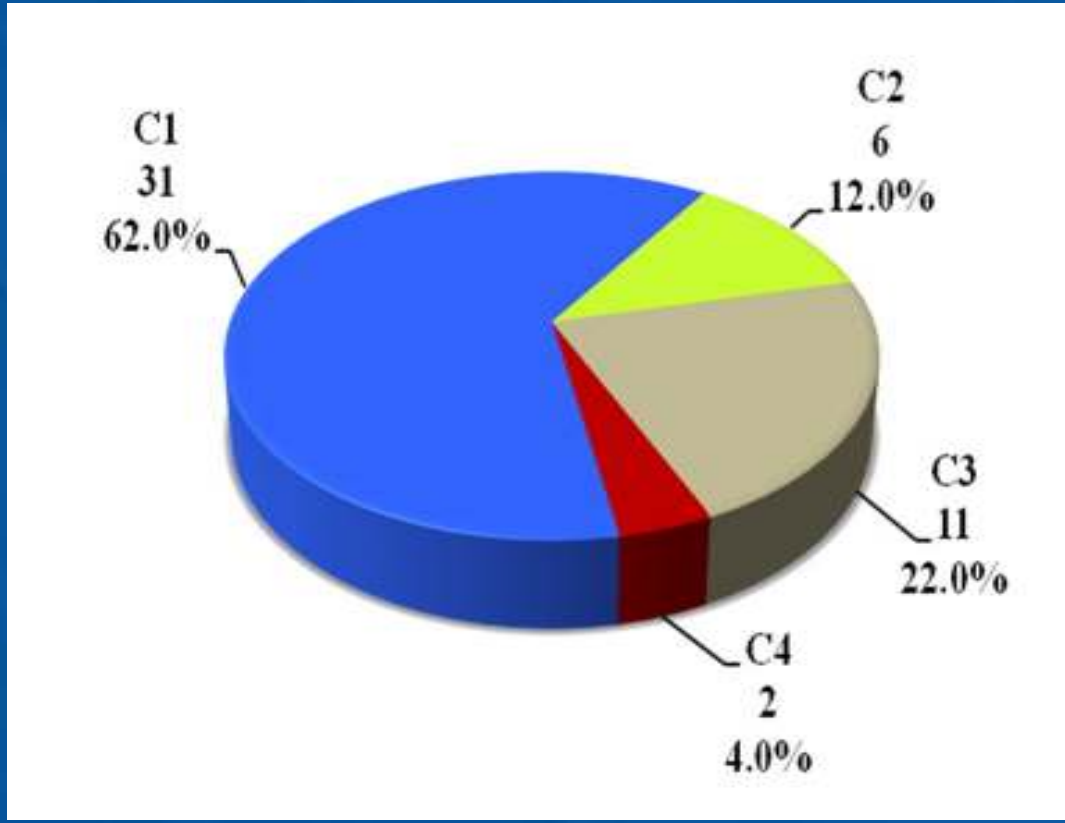
	No.	%
Sex		
Female	26	52.0
Male	24	48.0
Age		
Min. – Max.	10.0 – 18.0	
Mean ± SD.	15.48 ± 2.03	
Median (IQR)	16.0 (14.0 – 17.0)	



Distribution of the studied cases according to risk factors

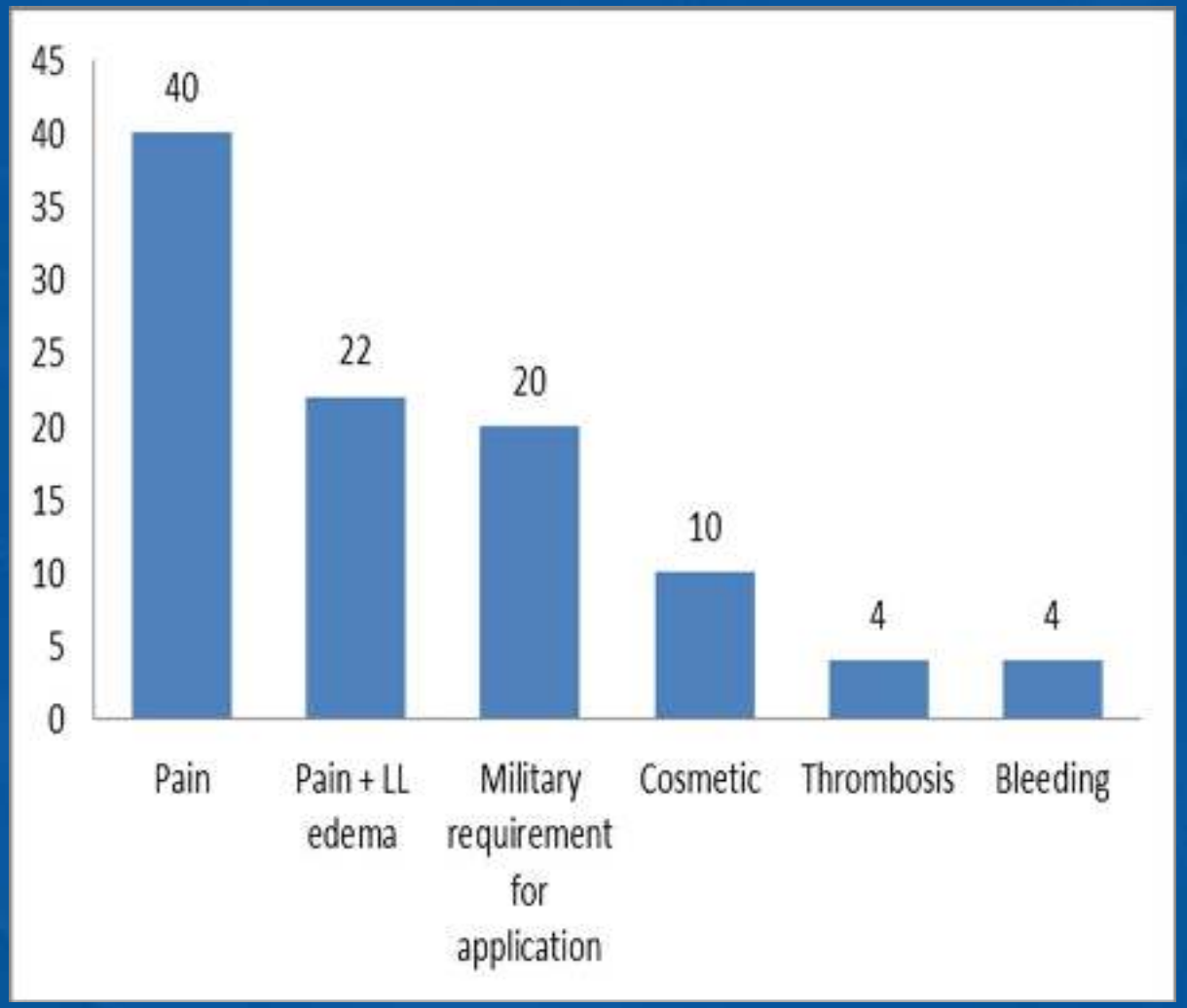


Clinical presentation

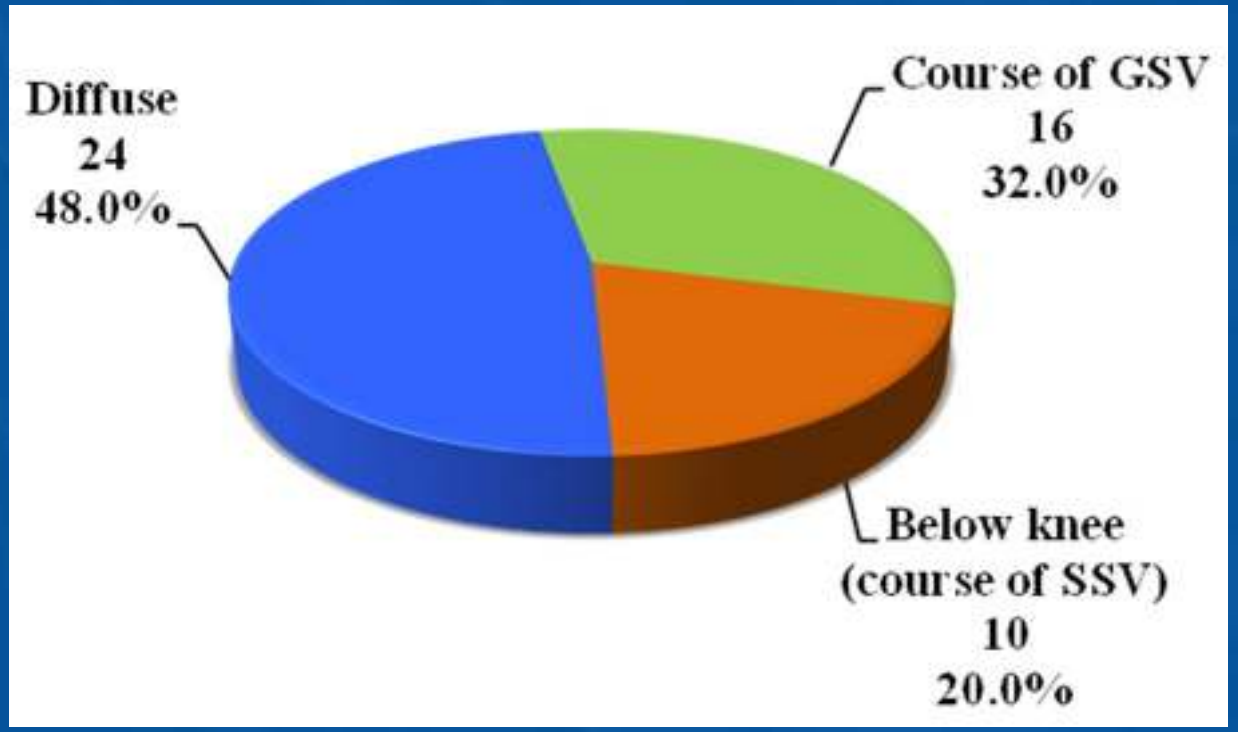


Complaints:

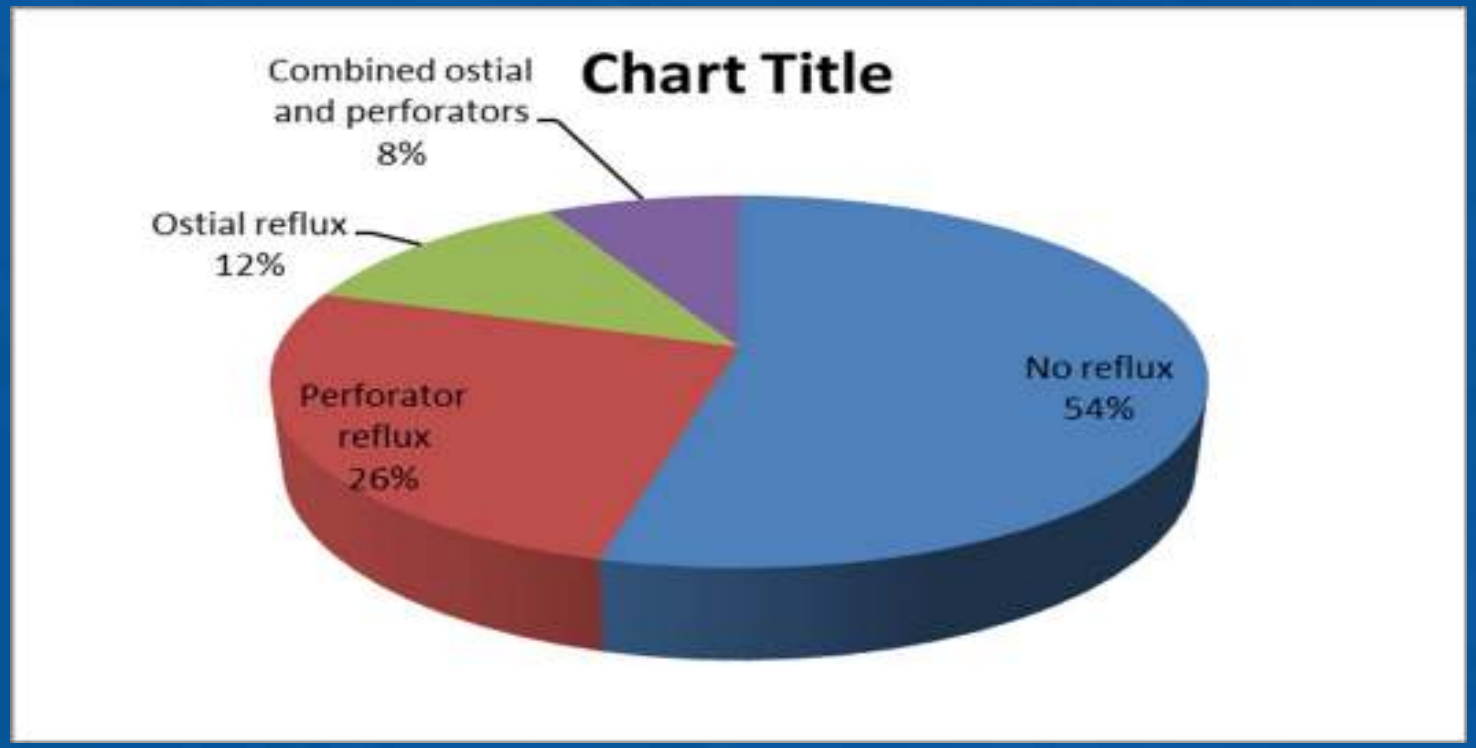
- 20 patients were complaining from pain.
- 10 patients complaining as requirement of application to military faculities.
- 11 patients presented with pain and lower limb edema.
- 5 patients complaining from cosmetic disappointment (included 3 female as preparation for marriage) .
- 2 patients came with thrombosis (STP of GSV).
- 2 patients presented with bleeding varicosities.



Distribution of the studied cases according to site of varicosities

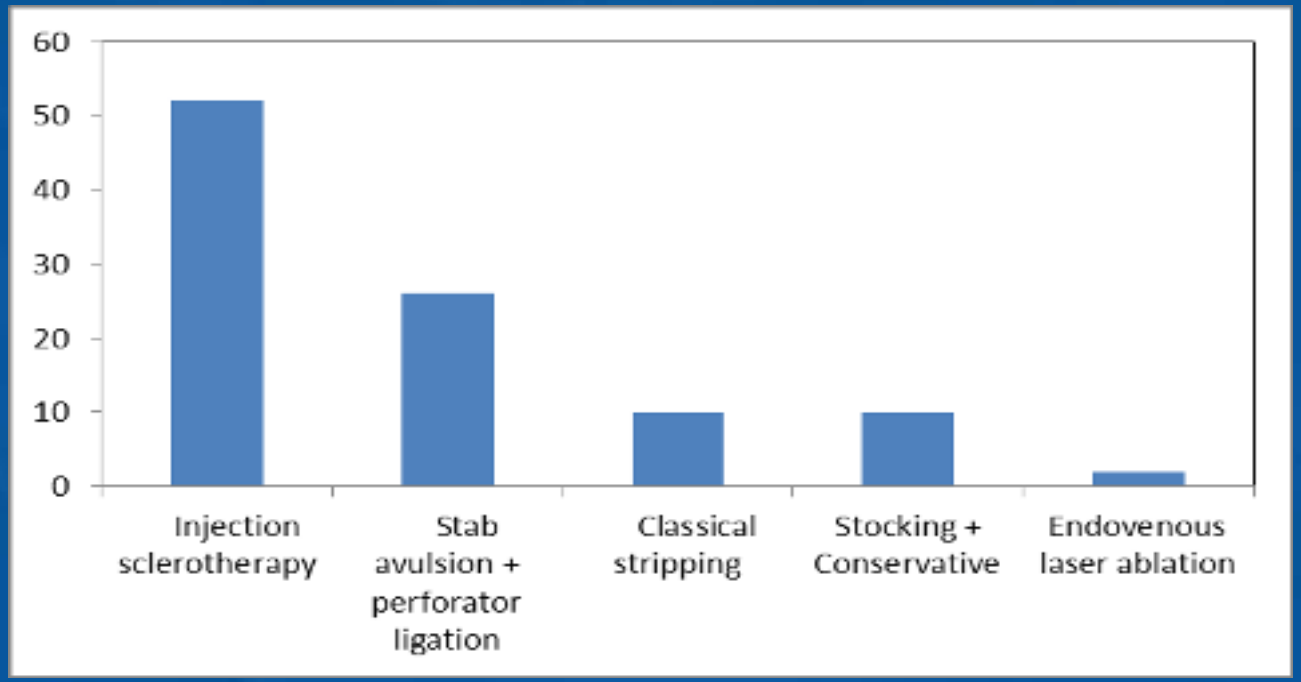


Distribution of the studied cases according to Reflux

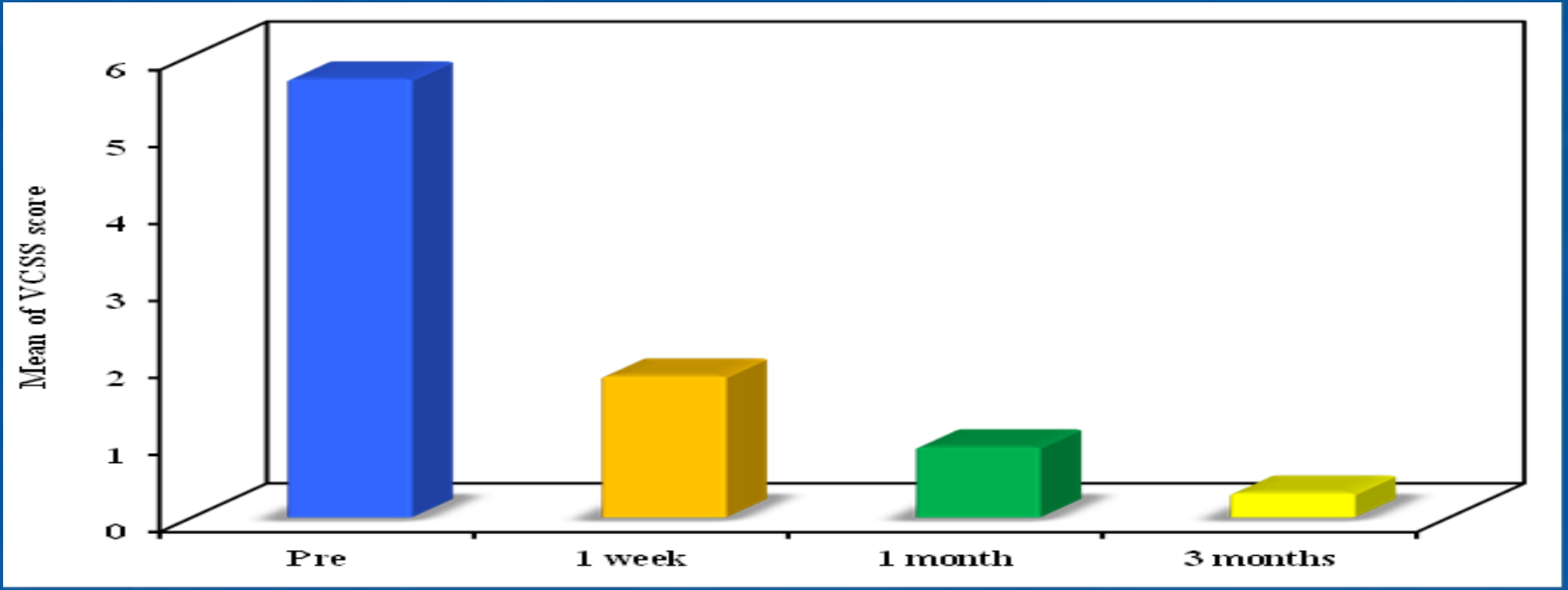


Distribution of the studied cases according to type of intervention:

Injection sclerotherapy	26	52.0
Stab avulsion + perforator ligation	13	26.0
(two cases mixed with injection sclerotherapy for bleeding VV)		
Classical stripping	5	10.0
Stocking + Conservative	5	10.0
Endovenous laser ablation	1	2.0



Improvement in VCSS



Difference in VCSS according to each type of intervention

VCSS	Type of intervention				
	Injection sclerothrerapy (n = 26)	Stab avulsion + perf Liga (n = 13)	Stocking +conservative (n = 5)	Classical stripping (n = 5)	Endovenous laser ablation (n= 1)
Pre					
Mean ± SD.	3.92 ± 1.83	6.77 ± 1.24	8.0 ± 2.0	9.20 ± 1.10	8.50 ± 0.71
Median (Min. –Max.)	3.0 (1.0 – 7.0)	6.0 (6.0 – 9.0)	9.0 (5.0 – 9.0)	9.0 (8.0 – 11.0)	8.50 (8.0 – 9.0)
1 Week					
Mean ± SD.	1.42 ± 0.64	2.08 ± 0.64	2.50 ± 1.0	2.80 ± 0.45	2.0 ± 0.0
Median (Min. –Max.)	1.50 (0.0 – 2.0)	2.0 (1.0 – 3.0)	3.0 (1.0 – 3.0)	3.0 (2.0 – 3.0)	2.0 (2.0 – 2.0)
1 Month					
Mean ± SD.	0.65 ± 0.56	1.0 ± 0.0	1.50 ± 0.58	1.60 ± 0.55	1.0 ± 0.0
Median (Min. –Max.)	1.0 (0.0 – 2.0)	1.0 (1.0 – 1.0)	1.50 (1.0 – 2.0)	2.0 (1.0 – 2.0)	1.0 (1.0 – 1.0)
3 Months					
Mean ± SD.	0.12 ± 0.43	0.46 ± 0.52	0.75 ± 0.96	0.40 ± 0.55	1.0 ± 0.0
Median (Min. –Max.)	0.0 (0.0 – 2.0)	0.0 (0.0 – 1.0)	0.50 (0.0 – 2.0)	0.0 (0.0 – 1.0)	1.0 (1.0 – 1.0)

CASES

Case 1

Female patient 12 years old, medically free, with positive family history, not working.

Showed diffuse spider and reticular veins in left lower limb at lateral aspect thigh and leg and post aspect knee.

Injection sclerotherapy done

Case 2

Male patient 17 years old medically free with negative family history, working as barber since 3 years complaining from pain and lower limb edema in standing in work.

Venous duplex show SFJ reflux grade II with incompetent perforators.

Local examination showed truncal varicosities along course of GSV in thigh and below knee. groin to knee stripping and stab avulsion done.

Case 3

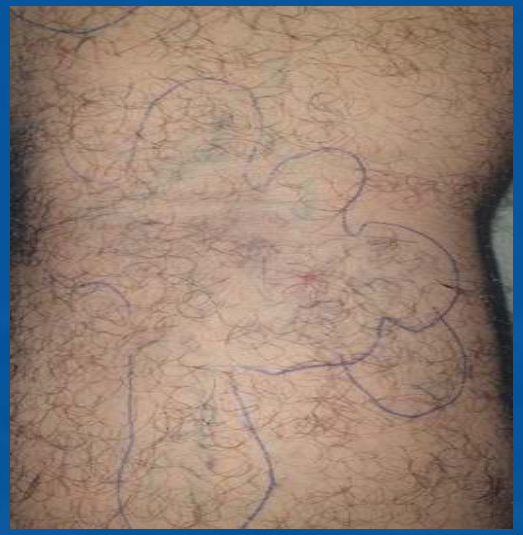
Male patients 15 years old with negative family history, medically free working as builder since 2 years complaining from pain in right lower limb.

Local examination show dilated GSV along all course with truncal varicosities.

Venous duplex of right lower limb showed SFJ reflux grade IV. Groin to knee stripping done.

Case 4

Male 16 year old medically free with positive family history not working presented to us as requirement of application of military acadmy.



Local examination showed bilateral reticular varicosities with diffuse distribution.

Venous duplex showed no major ostial and perforators reflux and injection sclerotherapy done.

Case 5

Male patient 16 years old with positive family history, working in factory.

Complaining from truncal varicosities along GSV with dilatation at site of knee.

Venous duplex showed competent SFJ with dilatation of GSV more than 1.7 cm with incompetent Perforators. Stab avulsion and perforator ligation done with stripping of short segment of GSV.

Case 6

Male patient 14 years old,working as abaker.

Presented with bleeding varicose veins from lateral aspect left leg with truncal varicose veins at medial aspect.

Stab avulsion with foam sclerotherapy done.

CONCLUSION

- Varicose veins in pediatrics are rare.

- Pediatrics patients may be presented by dilated GSV as adult patients however ostial reflux is less common than adult patients.

- Injection sclerotherapy is safe in pediatrics and it is the most used intervention in the study.

- Foam sclerotherapy during surgery as a treatment of acute bleeding reticular varicose veins.

CONCLUSION

- Stab avulsion and perforators ligation is safe and effective in pediatrics patients with varicose veins with perforator reflux which is common in pediatrics patients.

- No cases of chronic venous ulcer in pediatric age group were found in this study.

Thank you