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Using the Qbit Laser 980nm Diode Laser in Treating Varicose Veins Endogenous Laser Ablation (EVLA) in Al-Najaf Government

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Abstract: The use of laser technology in treating varicose veins endovenous laser ablation is a highly effective and innovative approach. Laser treatment offers a minimally invasive solution for individuals suffering from varicose veins in their legs.

When it comes to the treatment of varicose veins, laser therapy has proven to be a game-changer. This advanced technique targets the affected veins with precision, causing them to shrink and eventually disappear. Unlike traditional surgical methods, laser treatment requires no incisions or sutures, resulting in minimal scarring and downtime.

A laser with an energy ranging from(18-20)watts and a wavelength of (980 nm) was used to treat varicose veins. (50)samples were taken, (18)from males and (32)from females, ages ranging from (25-60) years. The group most affected by varicose veins were those in the third decade, and the data recorded for varicose veins was (20)patients with one leg, (10)males and (10)females, and (30)patients with varicose veins in both legs, (8)males and (22)females. The results showed a clear improvement in the thickness of the vein after exposure to the laser. The specialist doctor gives a period of two weeks for the results to appear, as well as in anticipation of the appearance of any side effects. The recovery is complete after 6 months, and the doctor prescribes medications. appropriate for them. The paper show that the highest percentage of the visitors for specialized clinic are women.

I. Introduction

Varicose veins constitute a progressive disease, and remission of the disease does not occur, except after pregnancy and delivery. During its course, the disease produces complication; most frequent are superficial thrombophlebitis, acute bleeding originating in one of the thin-walled varices, eczema, and, finally, skin ulceration [1,2]. Varicose vein is one type of venous insufficiency which falls under the broad heading superficial venous disease [3]. It is generally agreed that varicose veins affect from 40 to 60% of women and 15 to 30% men [4,5].

The dilation and elongation imply that these abnormal veins have been responsive to effects of pressure. The dilation of a vein and valve annulus stretches beyond the capability of its leaflets to close together. It was pressure over a course of time that causes a varix to become elongated, tortuous, pouched,

and thickened [6]. Among the theories that have been proposed to explain the cause of varicose veins is the hypothesis regarding weakness in the vein wall. Significantly reduced vein wall elasticity has suggested that the role of venous valves in development of varicose veins is secondary to changes in the elastic properties of the vein wall [7]. Estrogens, progestogens, or their associative action facilitate varicose vein development in individuals with factors which predispose them to vascular disorders (familial history, prolonged standing, obesity, and sedentary). They also aggravate the superficial venous state in these patients [8].

A variety of continuous lasers have been used over the last 25 years, including the argon laser (488–514 nm), Nd:YAG laser (1064 nm)1 and KTP laser (532 nm),2 for vascular abnormalities [9]. Face telangiectasia, spider nevi and venous lakes are common cosmetic blemishes and patients frequently seek medical therapies for their eradication. They vary markedly from patient to patient in their size, anatomical location, colour and pattern. Telangiectasia of the legs occurs in as many as 41% of women with 15% in men in Europe. Although the leg veins in more than half of these patients are symptomatic, the most common reason patients seek treatment is because of their appearance [10,11,12].

II. Patients

fifty patients were included in this study (32 female – 18 male). Patients were between 25 and 60 years of age. some photos were included in the study before and after treatment. In this study, the patients were suffered from the presence of varicose some in one leg and others in two legs. Before treatment, the area to be treated was prepared with skin cleanser only. Treatment was performed without any kind of an aesthesia. The endpoint was a slight greying of photocoagulation observed on the legs. For one and two legs, a 1 mm spot handpiece was used connected to a cooling system. After treatment, patients applied Epitheliale1 cream. The average duration was two weeks between sessions. this period is considered to be sufficient to notice the change in the leg and the extent of response after each treatment.

A laser with an energy ranging from(18-20)watts and a wavelength of(980 nm)continuous single mode with pulse duration 10µs-3s and fibers with 400µm, 600µm with sma905 and power <5mw used to treat varicose veins. Several wavelengths have been proposed, respectively 810, 940, 980, 1064, and 1320 nm, with 810, 940 and 980 nm the most commonly used. In conclusion, when it comes to treating varicose veins, laser therapy offers a cutting-edge solution that delivers impressive results. With its minimally invasive nature and high success rates, this advanced technique is revolutionizing the field of vascular medicine [13,14].

III. Results and Conclusions

3.1 Varicose veins statistic:

Now, we will review the results obtained and the extent of the laser on reducing the size of the vessels affected by varicose veins also the difference between males and female. Figure (1) show the percentage of female to male while table (1) show the information of patients under this study.





The side effects	Vein thickness	vein thickness	Signs & symptoms	time	type	Weight kg	Age Year	sex
	after	before						
pain	3mm	0.7mm	pain heaviness	2h	large	81	50	М
hardening	disappear	0.5mm	cosmetic	15min	2legs			
Discoloaration								
hardening int	4.5mm	6mm	pain heaviness	2h	large	80	37	m
laser site				15min	2legs			
pain	2.5mm	6mm	pain heaviness	1h	large	77	55	m
redness	4mm	7mm		20min	2legs			
oedma								
hardening								
pain	2.5mm	5mm	pain heaviness	1leg	large	83	60	m
redness				1h	2legs			
oedma				45min				
hardening								
	disappear	0.5mm	pine in leg itching	1h	spider +	73	30	m
		1mm	foot pain	15min	reticular			
	3.5mm	6mm	pain crampy heaviness	2h	large	80	55	m
	disapper	0.5mm	Discoloaration	30min	2legs			
	disappear	0.5mm	parasethsia limb pain	1h	large	78	30	m
		0.6mm		35min	+trunk			
veiness pine	5mm	9mm	pain heaviness	1h	large	82	45	m
vein hardness				45min	2legs			

Table 1: patients' i	information	under the study
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Fig. 2 showing the sequence of ages affected by varicose veins.



Fig. 3 showing mean of men for two legs

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The side effects	Vein thickness after	vein thickness before	Signs & symptoms	time	type	Weight kg	age	sex
Discoloration	disappear	0.5mm	cosmetic itching	2h	spider 2legs	69	32	f
Discoloration	disappear	0.8mm 1mm	cosmetic itching	1h 30mi n	spider 2legs	60	28	f
redness vein pain hard vein	2mm	6mm	pain heaviness Discoloration	1h 45mi n	large + spider 2legs	65	31	f
Discoloration claudication	disappear	0.5mm	cosmetic itching	2h 15mi n	spider 2legs	72	42	f
Discoloration	disappear	0.5mm	itching cosmetic pain	1h 30mi n	spider + reticular 2legs	68	27	f
Discoloration	disappear	0.5mm 1mm	cosmetic pine itching	1h 15mi n	spider 2legs	70	32	f
redness hardness	2.5mm 4mm	6mm Left 7mm right	pain heaviness	2hin	spider+ reticular	70	36	f
hardening int laser site	3.5mm	7mm	pain heaviness dulleration itching	2h 15mi n	2legs (spider +reticula r)	70	33	f
hardening int laser site	4mm	6mm	pain heaviness	45mi n	large 2legs	72	32	f
redness pine oedema	2.5mm	4mm	pain heaviness	2h 30mi	2legs (spider	75	41	f

Table 2: female samples of two legs affected by varicose veins

				n	+reticula r)			
pain redness oedma hardening	3mm	6.5mm	pain heaviness	1h 30mi n	large 2legs	65	25	f
pain redness oedma hardening	3mm	6.5mm	pain eczma Discoloaration	2h	large + spider + reticular	80	50	f
pain redness hardening	5mm	7mm	pain heaviness	2h	spider 2leg + reticular	79	38	f
pain redness hardening	4mm disappear	7mm 1mm	pine itching heaviness Discoloaration	2h 30mi n	large 2leg +spider	82	50	f
	2.5mm disappear	6.5mm 0.5mm	pine itching parasethsia	1h 15mi n	large +spider 1leg	68	27	f
	4mm disappear	7.5mm 0.5mm	pain numbness Discoloration	2h	spider 2legs	69	33	f
	5mm disapper	7.5mm 0.5mm	pain heaviness parasethsia	1h 20mi n	large +spider 1leg	76	42	f
	5.5mm	7.5mm	pain heaviness	2h	spider + reticular 2legs	70	44	f
	disappear	0.5mm 0.7mm	parasethsia limb bluish Discoloration	1h 15mi n	large +spider	65	28	f
	4.5mm	7mm	pain leg crampy	1h 40mi n	large +spider	77	39	f
	disappear 4mm	0.5mm 6mm			large vein +spider	74	37	f



Fig. 4 showing mean of female two legs

When discussing the legs table for males and females, we notice that the (mean) diameter of the vein after exposure to the laser for the purpose of treating varicose veins was less than after exposure to the laser, and here the statistical significance is 0.049, meaning that the technique is very successful, but it must be noted that females responded more to the treatment than males, due to the congenital nature. For females, the vein is less thick.

gender	Group type	state	Mean ±SD deviation.	correlation	sig	P-value
Male	Two legs	Before	4.2125±3.22997	0.735	0.38	0.049
		After	2.2503±1.58073			
Male	One leg	Before	6.5600±0.43767	138-	0.703	0.000
		After	2.6002±1.48659			
female	Two legs	Before	4.8952±2.86277	0.571	0.007	0.000
		After	1.8814±1.99893			
female	One leg	Before	4.6100±2.72007	.0.751	0.012	0.002
		After	2.2004±2.00229			

T-1-1- 0.	\/		
Table 3:	varicose	veins	statistics

When discussing the leg table for males and females, the same behavior as the legs table, we notice that the (mean) diameter of the vein after exposure to the laser for the purpose of treating varicose veins was less than after exposure to the laser, and here the statistical significance is 0.000, meaning that the technique is very successful, but it must be noted that females responded more to the treatment than Males, due to the congenital nature of females, where the vein is less thick.

The side effects	Vein	vein	Signs &	time	type	Weight	age	sex
	thickness	thickness	symptoms			kg		
	after	before						
Harding pain	3mm	7mm	pain	45min	large 1leg	80	37	m
site of laser			heaviness					
			eczema					
pine int laser	4mm	6mm	pain	1h	large 1leg	88	45	m
site redness			heaviness	30min				
redness pine	3mm 3mm	5.5mm	pain	1h	large 1leg	80	28	m
oedma		6mm	heaviness	15min				

Table 4: Male samples of one leg affected by varicose veins

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redness pine	2.5mm	6.5mm	pain	1h	large 1leg	70	26	m
oedma			heaviness					
discoloaration	4mm	7mm	pain	1h	large 1leg	75	43	m
			heaviness	45min				
pain redness	3mm	6.5mm	pain	1h	large 1leg	80	28	m
hardening			heaviness	15min				
	3mm	6.6mm	pine itching	1h	large 1leg	70	26	m
	disappear	0.5mm	heaviness					
	5mm	7mm	pain	1h	large 1leg	75	43	m
	disapper	0.5mm	crampy	45min				
			heaviness					
pain redness	2.5mm	6mm	pain	1h	large 1leg	85	38	m
hard veins			heaviness	30min	+spider			
			cosmetic					
	4mm	7mm	pain	1h	large 1leg	72	33	m



Fig. 5: showing mean of men one leg

The side effects	Vein thickness after	vein thickness before	Signs & symptoms	time	type	Weight kg	age	sex
Discoloaration	4mm	6mm	itching pain cosmetic	2h 30min	large 1leg	75	38	f
pain redness oedma hardening	3.5mm	6mm	pain heaviness	1h 20min	large 1legs +spider	70	34	f
discoloaration	disappear	0.5mm 1mm	cosmetic pine itching Discoloaration	1h 30min	large 1legs	64	30	f
	3mm	6mm	pain limb Discoloration	1h	large	70	34	f

Table 5: female samples of one leg affected by varicose veins

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	5.5mm disapper	6.5mm 0.5mm	pain heaviness Discoloration paranesthesia	1h 30min	large	65	31	f
	4mm	6mm	pain leg	1h 35min	large	69	35	f
	disappear	0.5mm 1mm	parasethsia Discoloration	1h 30min	large	70	28	f
	5mm disappear	7mm 0.5mm	pain parasethsia leg eczema	1h	spider	66	38	f
	disappear	0.6mm 0.4mm	numbness pain	2h	spider	68	40	f
pain int veins	2.5mm	6.5mm	pain heaviness	1h 20min	large 1leg +spider	69	34	f



Fig.6: showing mean of female one leg

There are many symptoms that a person feels that lead to varicose veins, as noted in the table below: We note that the symptoms varied between females and males.

Among the results obtained from the data is that there are side effects despite the success of the operation, according to gender and age. These effects are treated with medications prescribed by the doctor and also wearing compression stockings.

Signs & symptoms	Frequency	the side effects	Frequency						
pain	Female 25	pain	Female 8						
	Male 18		Male 10						
heaviness	Female 12	hardening	Female 11						
	Male 15		Male 8						
Discoloration	Female 9	Discoloration	Female 7						
	Male1		Male 1						

Table 6: signs & symptoms and the side effects of Varicose veins.

Cosmetic	Female 6	Laser site	Female 2
	Male 2		Male 2
itching	Female 10	redness	Female 7
	Male 2		Male 7
crampy	Female 1	oedma	Female 4
	Male 1		Male 4
dulleration	Female 1	Claudication	Female 1
	Male 0		Male 0
Eczema	Female 2		
	Male 1		
bluish	Female 1		
	Male 0		
numbness	Female 1		
	Male 0		
paranesthesia	Female 5		
	Male 1		







Fig. 6: Images (A) after and (B) before treatment by laser

3-2 Conclusions

- 1. Laser represents a very effective and safe method in treating many diseases, including varicose veins.
- 2. The cost of the operation is suitable for all people.
- **3.** The results and data statistics proved the effectiveness of the laser in treatment, as varicose veins with a thickness of >1mm disappeared, while those with a thickness of <1mm were reduced by half in most cases.
- **4.** By carefully examining the tables for males and females for the leg and legs, we notice that females respond to treatment more than males, due to the physiological nature of their varicose veins, where they are thinner and thinner.
- 5. Women are more susceptible to varicose veins than men due to the causes that lead to them, including pregnancy, obesity, and doing more work.
- 6. Weight is related to varicose veins, which affects women more than men.
- 7. Among the results obtained from the data is that there are side effects despite the success of the operation, according to gender and age. These effects are treated with medications prescribed by the doctor and also wearing compression stockings.

Knowledge: The samples were taken from the clinic of Dr. Hossam Nazir Nasser, the Board of Cardiovascular Surgery, located in Iraq, Najaf Al-Ashraf, Al-Eskan, Al-Muthanna Street.

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