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ULTRASONIC TREATMENT OF CICATRICALGIA

By

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After operations various kinds of pain frequently occur. In some of the cases the cause of the pain is for instance peptic ulcer, dumping, ventral hernia or biliary dyskinesia, but often the cause is unknown (*Dahl-Iversen et al.*, 1958). In a number of cases the pain can radiate from the cicatrice which feels sore and infiltrated (cicatricalgia).

In certain cases local anesthetics can be used to test the localization of the pain, and repeated injections have been used as treatment.

Short wave and massage have but slight effect, whereas relaxing exercises and respiratory exercises appear to be effective in some cases (*Winther* 1958).

Thoracolumbar sympthectomy has been performed with good primary result in some cases (*Bisgaard-Frantzen* 1949).

Till now, only few descriptions have been given of ultrasonic (u.s.) treatment of cicatricalgia. Pohlman, who has used u.s. for the treatment of 8 patients suffering from cicatricalgia, obtains complete remission of pain in all of them, and *Aldes* (1956–1957) obtains remission in 21 out of 28 patients. *Rubin & Kuitert* (1955) find good effect by u.s. treatment of scars and phantom pains.

By electronic microscopy of u.s. treated cicatricial tissue *Bierman* (1954) has shown changes in its fibrils and interfibrillar substance but no pathological effects in the surrounding tissue.

As regards the u.s. effect and the technique employed reference is given to the preceeding article.

OWN INVESTIGATION

The material covers a period of three years comprising patients referred from various surgical departments of the Rigshospitalet, Copenhagen.

The material (see Table 1) comprises 45 patients, 27 women and 18 men. The average age is 46 years.

The average number of u.s. sessions per patient has been 8. Of these patients, 22 showed complete relief of pain. 15 patients showed improvement, and in 6 patients the condition remained unchanged, whereas the pains were intensified in 2 patients.

If the patients are left out of consideration in whom no soreness or changes in the consistency were found in or round the cicatrice prior to u.s. treatment, and who have been treated ut aliquid fiat, the number of patients is reduced to 38, of whom 35 improved or were cured.

The two patients whose symptoms worsened had no soreness in the cicatrice.

No side effects have been seen.

DISCUSSION AND CONCLUSION

The patients' pain may have had different origins. It can have been profound visceral pains (colics) or pains projected to the skin via axon reflexes (viscerocutaneous reflexes).

Moreover, the pains can be due to changes in and round the cicatrice manifesting themselves as soreness and change of the consistency by palpation and pain by passive distension of the cicatrice and active contraction of the surrounding muscles.

38 of our 45 patients have had these sore changes of consistency in and round the cicatrice, and in 92 per cent of the cases these changes decrease or disappear after the u.s. treatment.

Of 7 patients who only had deep pains and no cicatricial soreness there was only effect in one.

These circumstances seem to indicate that the u.s. effect is due to affection of the cicatricial tissue and not of the reflex arch or viscera.

Six of the patients had received earlier treatment for the cicatricial pains in the form of a series of blockades of local anesthetics. Each time the effect only lasted a few hours, however.

It is important to treat sore cicatrices as the pains appear especially by activation of the patients, and as they can thus impede or delay their rehabilitation. Pains in thoracal cicatrices for instance will impair the respiration and the mobilization of columna thoracalis which may, among other things, result in scolioses.

TABLE 1

Operation	No. of patients	♂	♀	Age	The ultrasound treament					Remarks
					Number	Aggravated	Unchanged	Better	Cured	
Cholecystectomia:										
cholelithiasis	–	–	1	68	8	–	–	–	1	
„	–	–	1	69	12	–	–	1	–	
„	–	–	1	54	6	–	–	–	1	
„	–	–	1	49	8	–	–	1	–	
„	–	–	1	63	12	–	–	–	1	
„	–	–	1	68	12	–	–	–	1	
„	–	–	1	63	12	–	1	–	–	diffuse abdominal soreness
„	–	–	1	27	6	–	–	–	1	
„	–	–	1	41	6	1	–	–	–	no primary soreness of cicatrice
„	–	–	1	58	6	–	–	1	–	+ adiposalgia
„	–	–	1	47	6	–	–	1	–	
„	–	1	–	46	12	–	–	–	1	
„	–	–	1	57	6	–	–	–	1	
„	–	1	–	50	5	–	–	–	1	
„	–	–	1	54	6	–	–	1	–	
X	15	2	13	54	8	1	1	5	8	
Resectio ventriculi:										
ulc. ventr.	–	1	–	38	12	–	–	–	1	
„	–	1	–	55	10	–	1	–	–	no primary soreness of cicatrice
„	–	1	–	32	6	–	1	–	–	no primary soreness of cicatrice
„	–	–	1	41	6	1	–	–	–	no primary soreness of cicatrice
„	–	1	–	50	5	–	1	–	–	diffuse abdominal soreness
„	–	1	–	45	6	–	–	–	1	
„	–	1	–	39	10	–	–	1	–	
X	7	6	1	43	8	1	3	1	2	

Thoracatomia										
abcessus pulm.	–	1	–	49	11	–	–	1	–	
cancer pulm.	–	1	–	50	6	–	–	–	1	
„	–	–	1	64	12	–	–	1	–	
„	–	–	1	65	6	–	–	1	–	
trauma thoracis	–	1	–	40	6	–	–	–	1	
X	5	3	2	53	8	–	–	3	2	
Laparotomia med. inf.:										
amputatio uteri	–	–	1	40	12	–	–	1	–	+ profound pain
„	–	–	1	42	12	–	–	–	1	
parametritis	–	–	1	36	9	–	–	–	1	
amputatio uteri	–	–	1	40	10	–	–	1	–	no primary soreness of cicatrice
X	4	–	4	40	8	–	–	2	2	
Nephrectomia:										
nefrolithiasis	–	–	1	33	10	–	–	1	–	+ diffuse soreness
„	–	1	–	49	6	–	–	–	1	
„	–	1	–	62	12	–	–	–	1	
„	–	1	–	40	10	–	–	1	–	no primary soreness of cicatrice
X	4	3	1	46	8	–	–	2	2	
Others:										
sympatectomia	–	–	1	42	6	–	–	–	1	
osteotomia colli femoris	–	–	1	38	8	–	1	–	–	no primary soreness of cicatrice
ostetomia humeri	–	1	–	29	10	–	1	–	–	
amputatio fem.	–	1	–	29	10	–	–	–	1	
incisio (furunculus)	–	1	–	29	10	–	–	–	1	
vulvectomia (cancer)	–	–	1	62	12	–	–	–	1	
appendectomia	–	–	1	30	6	–	–	1	–	+ fibrositis in abdominal muscles
amputation mammae	–	–	1	53	6	–	–	–	1	
„	–	–	–	54	10	–	–	–	1	
torticollis	–	1	–	43	6	–	–	1	–	operated on 16 years old
total	45	18	27	46	8.6	2	6	15	22	

SUMMARY

45 patients are treated with ultrasound for cicatricalgia. In 38 of the patients objective changes were found in the cicatrices prior to the treatment, and in 35 of these patients improvement or complete remission of symptoms was found. Of the remaining 7 patients, who had no soreness or changes of consistency in the cicatrices, only one indicated improvement.

RESUME

45 malades ont été traités par ultrason pour algies cicatricielles. Chez 38 des malades, on avait trouvé des changements objectifs des cicatrices avant le traitement et chez 35 de ces malades on obtint une amélioration ou la suppression complète des symptômes. En ce qui concerne les 7 autres malades chez lesquels il n'y avait pas de sensibilité ou de changement de la consistance de la cicatrice, une amélioration n'a été constatée que dans un seul cas.

ZUSAMMENFASSUNG

45 Patienten wurden mit Ultraschall wegen Narbenschmerzen behandelt. Bei 38 der Patienten wurden objektive Narbenveränderungen vor der Behandlung gefunden, und bei 35 von ihnen erhielt man eine Besserung oder ein vollständiges Verschwinden der Symptome. Von den übrigen 7 Patienten, die weder Empfindlichkeit noch Konsistenzveränderungen in den Narben zeigten, gab nur einer Besserung an.

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