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VASCULAR ENTRAPMENT OF THE SACRAL PLEXUS AS A CAUSE OF PAIN AND LUTS

Hypothesis / Aims of Study

Pelvic congestion syndrome is characterized by varicosity and dilation of the ovarian and/or internal iliac veins and is a well known cause of pelvic pain; however, there is little awareness to the fact that varicosities of the internal iliac system may entrap the nerves of the sacral plexus against e pelvic sidewal, producing lower urinary tract symptoms, rectal and perineal pain and sciatica.[1]

The objective of this study is to report our initial experience in dealing with such patients.

Study Design, Materials and Methods

In this prospective case series 17 (16 women; one man)patients were enrolled.

Table 1 show the localization of entrapments, the localization of symptoms and the varicose veins causing the entrapment.

The topographic diagnosis is made preoperatively, by anamnesis and neurologic examination and confirmed by MRI with tractography (Figure 1), followed by a fluoroscopy guided diagnostic block.

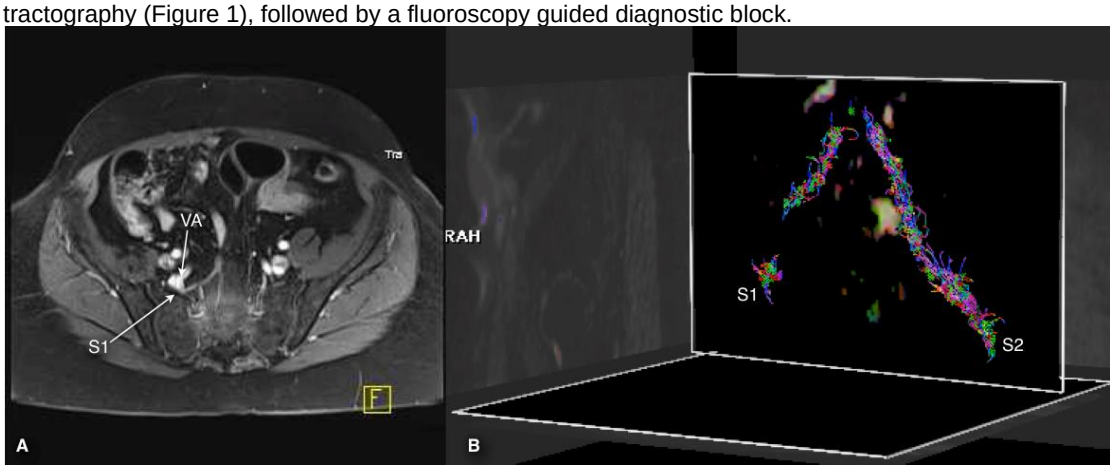

Figure 1 – A: contrasted MRI showing enlarged vessels in direct contact with S1 nerve root. B: Tractography showing a signal gap in S1.

Results

The average time lag between onset of symptoms and disgnosis was 4 years. Patients underwent in average one previous procedure due to the pain.

After the diagnostic block, one of the patients became asymptomatic and did not require surgery. All the other 16 patients underwent laparoscopic decompression of the nerves. (Figure 2)

Overal success (50% or more reduction in VAS) rate was 76.5% (13/17) – mean preoperative pain (VAS) was 9.18 versus postoperative 2.88 (p=0. 0000003).

Of the 13 successful patients, 10 (79.9%) developed transient postoperative pain, that was treated with physical therapy and oral treatment. Mean duration of postoperative pain was 4.4 months.

Interpretation of Results

The main factor associated with failure after embolization for pelvic congestion syndrome are urinary urgency, perineal pain and sciatica. These patients experience a pain-free interval of two to three months and then symptoms recur in over 70% of cases.[2] We believe that this is due to the scar tissue formed on a vessel that was already entrapping a nerve.

Laparoscopy, on the other hand, provides 76.5% improvement rate and the dissection plane between the vessel and the nerve is much smoother than what is observed between the nerves and fibrotic tissue, with the latter being much more aggressive to the nerve. Therefore, laparoscopic detrapment should be the treatment of choice whenever vascular intrapelvic nerve entrapment is diagnosed.

The long gap and unnecessary surgeries between onset of symptoms and diagnosis highlight the lack of awareness on this condition.

Concluding Message

When facing refractory LUTS, especially when associated with gluteal/perineal pain and/or sciatica, one should consider the possibility of an intrapelvic nerve entrapment. If this is the case, laparoscopic detrapment is the treatment of choice.

Table 1: Preopereative Symptoms

#N	Entrapped Nerve	Dilated Vessel	Perin. Pain	Glut. Pain	Urin. Urge.	Fec. Urg.	Rectal Pain	Sciatica	Preop VAS	Postop VAS
1	S2-S3-S4 Left	Internal Iliac Vein	+	+	+	+	+	+	8	0
2	Left Sciatic	Superior Gluteal Vein	+	+	-	-	-	+	10	1
3	Bilateral Sciatic	Superior Gluteal Vein	-	+	-	-	-	+	8	4
4	Left Pudendal	Pudendal Vein	+	+	+	+	+	-	9	7
5	Right Sciatic	Superior Gluteal Vein	-	+	-	-	-	+	10	4
6	Left Sciatic	Superior Gluteal Vein	-	+	-	-	-	+	10	4
7	Right Sciatic	Superior Gluteal Vein	-	+	-	-	-	+	10	10
8	Right Sciatic & Pudendal	Superior Gluteal Vein & Pudendal Vein	+	+	+	+	+	+	10	2
9	Right Sciatic	Superior Gluteal Vein	-	+	-	-	-	+	9	0
10	Right Sciatic	Superior Gluteal Vein	-	+	-	-	-	+	10	2
11	Right Sciatic	Superior Gluteal Vein	-	+	-	-	-	+	8	1
12	S2-S3 Right	Internal Iliac Vein	+	+	+	+	+	+	10	1
13	Right Sciatic & Pudendal	Superior Gluteal Vein & Pudendal Vein	+	+	+	+	+	+	10	5
14	Right Sciatic & Pudendal	Superior Gluteal Vein & Pudendal Vein	+	+	+	+	+	+	10	0
15	Right Sciatic	Internal Iliac Vein	+	+	-	-	-	+	10	7
16	S1 Right	Internal Iliac Vein	+	+	-	-	-	+	6	1
17	S1-S2 Right	Internal Iliac Vein	+	+	+	+	+	+	8	0

Table 2: Clinical Characteristics – (p refers to Student's T Test Preop vs. Postop. Pain)

Variable	Average	Median	Stand. Dev.	p
Age	39.45	36.82	10.98	-
Follow-Up	13.04	6.97	15.23	-
Pre-Op Pain (VAS)	9.18	10.00	1.19	*
PostoOp Pain (VAS)	2.88	2.00	2.98	0.0000003
Operating Time	141.50	134.00	44.26	-
Previous Surgeries	1.06	1.00	1.09	-
Time Lag - Onset of Symptoms to Diagnosis (Years)	3.80	4.00	2.93	-

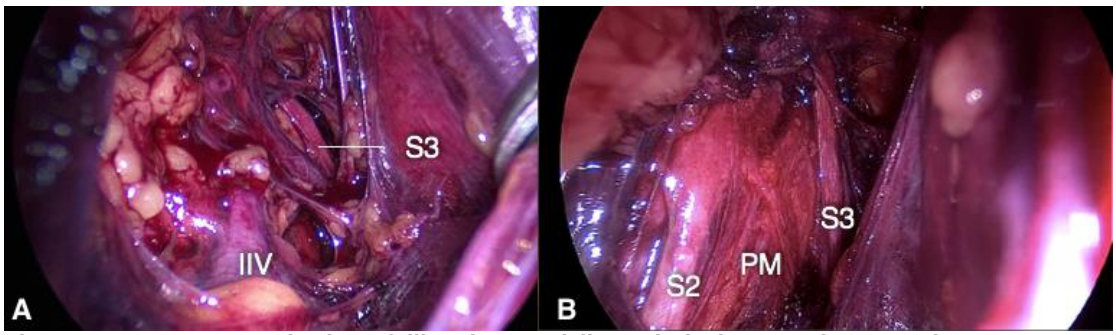

Figure 2 – A: Laparoscopic view of dilated Internal Iliac Vein (IIV) entrapping S2 and S3 nerve roots against the pyriformis muscle (PM). B: Final aspect after detrapment.

References

1. Lemos N, Marques RM, Kamergorodsky G, Ploger C, Schor E, Girão MJ. Vascular entrapment of the sciatic plexus causing catamenial sciatica and urinary symptoms. Int Urogynecol J. 2016 Feb; 27(2):317-319.
2. Nasser F, Cavalcante RN, Affonso BB, Messina ML, Carnevale FC, de Gregorio MA. Safety, efficacy, and prognostic factors in endovascular treatment of pelvic congestion syndrome. Int J Gynaecol Obstet. 2014 Apr;125(1):65-8. doi: 10.1016/j.ijgo.2013.10.008.

Disclosures

Funding: None **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** It is an observational trial. All patients signed a consent allowing the use of their data and images for scientific communications. **Helsinki:** Yes **Informed Consent:** Yes