

Re-publication of my RSD Peripheral Neuropathy Three-Phase Bone Scan Paper Richard J. Barohn, MD

I hope the RRNMF readership will indulge me in re-publishing this old paper of mine which I love for many reasons, but alas I do not believe anyone outside of India has seen it. When I was a neurology resident at Wilford Hall U.S. Air Force Medical Center in San Antonio (1983 to 1986), I saw a number of cases of what we then called Reflex Sympathetic Dystrophy. Now we refer to this as Complex Regional Pain Syndrome. All of the patients had an underlying peripheral neuropathy or nerve damage of some sort and I suspect that's why they were referred to neurology. I had done some reading on the three-phase bone scan and RSD and I ordered the scans on all of these patients, and to my surprise all were positive showing increased activity in the flow, tissue, and bone phases, as had been reported in the literature. I collected all of the cases and I recall presenting them at the annual all-military neurology conference that was called AMED in either Washington DC at Walter Reed or Letterman Army Medical Center in San Francisco. This was a great forum of Army, Air Force and sometimes Navy neurologists and residents in which we heard lectures from well-known academic neurologists. Residents also had the opportunity to present "research" data, usually a single or series of case reports. I presented from the platform at this conference each year of my residency and I know it prepared me for so many future scientific presentations.

I believe I did the RSD presentation at the military neurology meeting in my last year of residency, in the spring before I went to Ohio State University to do a neuromuscular fellowship under Jerry Mendell, John Kissel, Zarife Sahenk, and Jack Warmolts, an experience which changed my life. In the OSU fellowship everyone got ready to present posters or platforms at neurology meetings all year round: AAN in the spring, ANA in the fall and any other specialty conference that would come up. As a resident at Wilford Hall I submitted my RSD abstract to the ANA and amazingly it was accepted. I had to put together the poster the old-fashioned way at OSU and the team helped me do that. It was my first poster at a national meeting. At the time actually typed the information for the poster and then our secretary Nancy Hodges would enlarge the printed version on a copy machine, and we would paste these onto cardboard for the

poster. I had brought multiple copies of the three-phase bone scan images with me. I was very proud of this poster and I still have most of it (I never throw anything away). I went on to work on the projects Jerry and the team had for me during that fellowship year and left the RSD TPBS information unattended for a while. There was a lot of pressure to get the big CIDP project done (see my reference to this in the Letter from the Founding Facilitator in this issue) and along the way I picked up other projects involving diabetic lumbosacral radiculoplexopathy, congenital myopathy with small Type I fibers, testosterone and muscle stimulation for myotonic dystrophy; mitochondrial myopathy and respiratory depression; a ragged red fiber case with autopsy, evoked potentials in CIDP, delayed gastric emptying in Duchenne muscular dystrophy. All resulted in a publication eventually except for the myotonic dystrophy one, but I still have that manuscript and plan to submit it to the RRNMF Neuromuscular Journal next year (never never let a paper go unpublished).

I did see one dramatic case of RSD while a fellow with Jerry. It was a 17-year-old who tried to commit suicide from a drug overdose, fortunately unsuccessfully. But he was found down and had been in one position for a day or so. He had a compressive sciatic neuropathy. The strength component improved but he was left with a raging RSD. I recall he limped in holding a bucket. I asked him what the bucket was for and he said he has to take it everywhere to and fill it with cold water and immerse his painful foot in the water for pain relief. This was the only thing that helped. The foot and distal leg was red and warm. His three-phase-bone scan was of course abnormal in all three phases. Jerry and the OSU team considered me their resident expert in this condition. It was the only thing I ever taught them. We put the young man on high-dose prednisone, analgesics, and sent him for a lumbar sympathetic block and he did well over time.

When I returned to Texas after the fellowship I was still writing fellowship papers and it was not until several years later that I got to the RSD-TPBS paper. I sent it to several journals but could not get anyone to publish it. The paper was long and had a lot of photographs of three-phase bone scans. I almost gave up and then in 1996 Drs. KK Sinha and P Chandra asked me if I wanted to contribute an article to their annual *Advances in Clinical Neurosciences* volume. I immediately thought of the RSD-TPBS paper and they willingly accepted it. I went on to publish several other articles in *Advances in Clinical Neurosciences* over the next several years. But the only neuromuscular one that had information that I never subsequently published was this paper (Michael

Collins and I did publish the longest case report ever on primary progressive aphasia in one volume. It was a case we saw at Wilford Hall Medical Center together and it may be worth republishing that one at some point! A classic Collins “brief report”).

So now we have launched this new journal and it occurred to me that now is my opportunity to share this old paper with the world. It took me a while to find a way to contact the editors. I had very old email addresses of the editors and all I had was an address for the Catholic Press on Karbala Road in Ranchi, India. Fortunately, with the help of Jayashree Sundarajan, one of my former neurology residents, I got an updated email address from Dr. Chandra, was able to contact him and ask if I could reprint the paper in this publication. He graciously agreed on August 12, 2020:

Dear Dr. Barohn,

On behalf of the publishers and editors of *Advances in Clinical Neurosciences*, I am happy to grant permission to reprint the following paper in the *RRNMF Neuromuscular Journal*:

Barohn R.J. Reflex sympathetic dystrophy due to peripheral neuropathy and the Three-Phase- Bone Scan: Case Series and Review. 1997;vol7,pages 129-150.

Unfortunately, we don't have an electronic copy.

Thank you for the link to the new journal. I look forward to reading it. With best wishes,

Prakash Chandra

I had asked Dr. Chandra if they had an electronic copy which would make reprinting it easier but alas this was before the age of electronic copies, I think. So Marianne Reed in the digital publishing unit at KU has a high quality scanner. I still had glossy paper preprints of the paper (I said I never throw anything away) and I mailed it so she could have the original paper scanned. And that is what appears in this issue.

I would like to thank Dr Chandra for allowing me to reprint/republish this old paper which has a lot of sentimental value to me. And I still think the TPBS is a good tool although few use it now.

I hope you enjoy my neurology residency paper.