

NOT EVERY PERIPHERAL NEUROPATHY IN PEOPLE WITH DIABETES IS DIABETIC NEUROPATHY: A CASE REPORT

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Introduction: Diabetic neuropathy presents as sensory, motor and autonomic neuropathy. Although diabetes is the most common form of chronic sensorimotor neuropathy, clinicians should always consider and exclude other etiological factors, such as alcohol, nutritional deficiencies, toxins, malignancy, genetic conditions or hypothyroidism.

Case report: A 44-year-old, with a 27-year history of type 1 diabetes, hypertension and dyslipidemia was admitted to our department due to symptoms of DPN. He complained for numbness, burning sensation, aching, hyperalgesia and allodynia. Patient suffered these symptoms, as well as weakness of limbs since 2018. During the last 5 years he had visited several clinicians, following symptomatic therapies for the painful symptoms ineffectively, even orthopedists suggesting herniated disk surgery.

Laboratory tests showed poor glycemic control (HbA1c 8.2%), while lipids, urinary albumin, folic acid, methylcobalamin and thyroid stimulating hormone ranged in normal levels. Clinical assessment of both small fiber sensation with temperature changes or pinpricks and large fiber sensation with vibrations and pressure testing using the standard Semmes-Weinstein 5.07 10 g monofilament, revealed serious sensory deficits. Additionally, a slight distal muscle atrophy at lower limbs as well as a bilateral pes cavus and hammer-toe deformity were observed. Reflexes of bilateral knee and ankle were absent. Due to severe and rapidly progressive symptoms and motor weakness affecting also the upper extremities, we performed neurological consultation. Meanwhile, electromyography recognized a peripheral neurogenic impairment to all four extremities, and severe injuries to motor and sensory fibers, especially in the lower limbs. Based on the aforementioned information, genetic testing for the patient were conducted revealing Charcot-Marie-Tooth neuropathy, X-linked dominant,1 (CMT1), due to GJB1 gene mutation. CMT1 results in sensory and motor neuropathy, combining demyelinating and axonal characteristics.

Conclusion: Sufficient medical history and thorough clinical examination represent the cornerstone for accurate diagnosis.

EMG Results									
EMG	Insertion	Fibrillat.	Spontaneous		Other dis.	Motor unit potential			Interference Pattern
			PSW	Fascicul.		Amp	Dur	Morphology	
Inteross dors I R				+		Large	Normal	polyphasic	Reduced (>5MUP)
Biceps R		-	-			Large	Normal	polyphasic	Reduced (>5MUP)
Vastus lateralis R			-			Large	Normal	polyphasic	Reduced (>5MUP)
Tibialis anterior R					CRD +	Low	Normal	Normal	Reduced (<5MUP)
Tibialis anterior L		+	+		CRD +	Low	Normal	Normal	Reduced (<5MUP)
MNCV Results									
MNCV	Site/Segment	Latency	Amplitude PP	Amplitude P	Distance	NCV	Duration	Area	
		ms	mV	mV	mm	m/s	ms	mVms	
Medianus L	Wrist-Abp	5,1	7,2	3,9			10,5	19,4	
	Above Elbow-Wrist	11,1	5,6	3,2	230	38,4	8,1	14,3	
Ulnaris L	Wrist-Adm	3,0	6,8	3,4			13,2	22,0	
	Below Elbow-Wrist	8,3	5,5	2,7	230	43,7	8,2	13,6	
Ulnaris R	Ab Elbow-Bel Elbow	10,9	5,2	2,5	120	46,8	12,5	19,1	
	Wrist-Adm	3,3	8,5	4,1			8,5	21,6	
	Below Elbow-Wrist	8,6	8,0	3,9	230	43,2	8,8	20,8	
	Ab Elbow-Bel Elbow	11,6	7,5	3,7	128	42,3	14,1	28,3	
Medianus R	Wrist-Abp	5,7	6,5	4,0			6,1	12,7	
	Above Elbow-Wrist	11,0	5,0	3,1	230	43,2	8,8	13,1	
	Axilla-Above Elbow	15,1	3,9	2,0	190	45,8	11,1	13,1	
Peroneus profundus R	Ankle-EDB	42,6	0,0	0,0			0,2	0,6	
	Bel Fib. Head.-Ankle	24,9	0,0	0,0			2,8	0,0	
Tibialis R	Med. Mal-Abd Hal	9,6	0,2	0,1			4,7	0,3	
Peroneus profundus L	Ankle-EDB	19,4	0,0	0,0			1,7	0,6	
	Bel Fib. Head.-Ankle	35,3	0,0	0,0			0,2	0,7	
SNCV Results									
SNCV	Site/Segment	Latency	Amplitude PP	Amplitude PP	Distance	NCV	Duration	Area	
		ms	uV	uV	mm	m/s	ms	uVms	
Medianus L	Wrist-3rd finger	4,2	6,82	6,85			1,5	9,27	
Medianus L	Wrist-3rd finger	4,1	3,74	4,11	150	36,4	2,1	5,03	
Ulnaris R	Wrist-5th finger	3,4	6,26	2,27	128	37,8	1,8	44,50	
Ulnaris L	Wrist-5th finger	4,2	7,03	5,94	115	27,7	1,7	21,30	
Medianus R	Wrist-3rd finger	4,3	4,98	3,16	145	33,9	2,0	4,27	
Suralis L	Leg-Lat. Malleolus	17,9	0,00	0,00			0,0	0,00	
Suralis R	Leg-Lat. Malleolus	9,0	0,00	0,00			0,0	0,00	

