

Hallux Interphalangeal Joint Arthroplasty for the Resolution of Chronic Hallux Wounds

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Statement of Purpose

This retrospective study is to show the possible benefit of hallux intermetatarsal phalangeal joint arthroplasties as a definitive procedure to resolve chronic wounds for hallux ulcerations.

Level 3 retrospective comparative study

Methodology

Data for this retrospective study was obtained from electronic medical record using CPRS database. All patients in the study were treated and followed up in Podiatry service of Lebanon PA Veterans Affairs hospital. 4 attending Podiatry doctors and 3 Podiatry residents were involved in the non-surgical, surgical and postoperative care of these patients. 19 patients' charts were reviewed. All patients were male, primarily Caucasian race. 12 of the patients have Diabetes mellitus type 2. None of the patients have a history of peripheral vascular disease. Patients' age ranges from 28 to 86 years old. Patients underwent a series of non-surgical treatments including local wound care and offloading. All patients failed the conservative treatments. Due to previous attempts of IPJ or first metatarsal phalangeal joint fusions two of the patients were excluded, leaving a total of 17 patients for the study. Total of 19 hallux intermetatarsal phalangeal joint arthroplasties performed.

Case #	R/L	Age	Diabe	PVD	# of days of conservative treatment prior to IPJ arthroplasty	# of days from IPJ arthroplasty until ulcer resolved	% faster recovery
1	L	53	No	No	162	22	86.4197531
2	R	55	No	No	305	35	88.5245902
3	R	64	Yes	No	127	39	69.2913386
4	L	69	Yes	No	34	12	64.7058824
5	R	61	Yes	No	33	15	54.5454545
6	L	69	No	No	508	22	95.6692913
7	L	76	Yes	NO	717	20	97.2105997
8	L	54	Yes	No	36	15	58.3333333
*9	R	28	Yes	No	759	30	96.0474308
10	L	85	Yes	No	340	43	87.3529412
11	R	84	Yes	No	393	26	93.3842239
12	L	68	NO	No	192	13	93.2291667
13	L	57	Yes	No	100	49	51
14	L	76	Yes	No	321	14	95.6386293
15	R	68	yes	no	37	5	86.4864865
16	R	72	yes	no	784	41	94.7704082
17	R	55	yes	no	23	19	17.3913043
18	R	56	no	no	64	17	73.4375
19	L	65	no	no	132	43	67.4242424
Total							
Mean		63.9			266.6842105	25.26315789	
Medium		65			162	22	
Range		57			761	44	

Table 1

Results

Out of the 19 procedures that were performed all procedures resulted in healed ulceration sites with no recurrence of the ulceration. In follow-up visits there was little complaint of pain or cosmetic appearance. 3 of the patients developed local cellulitis which resolved when treated with oral antibiotics. (Table 1, 2, 3)

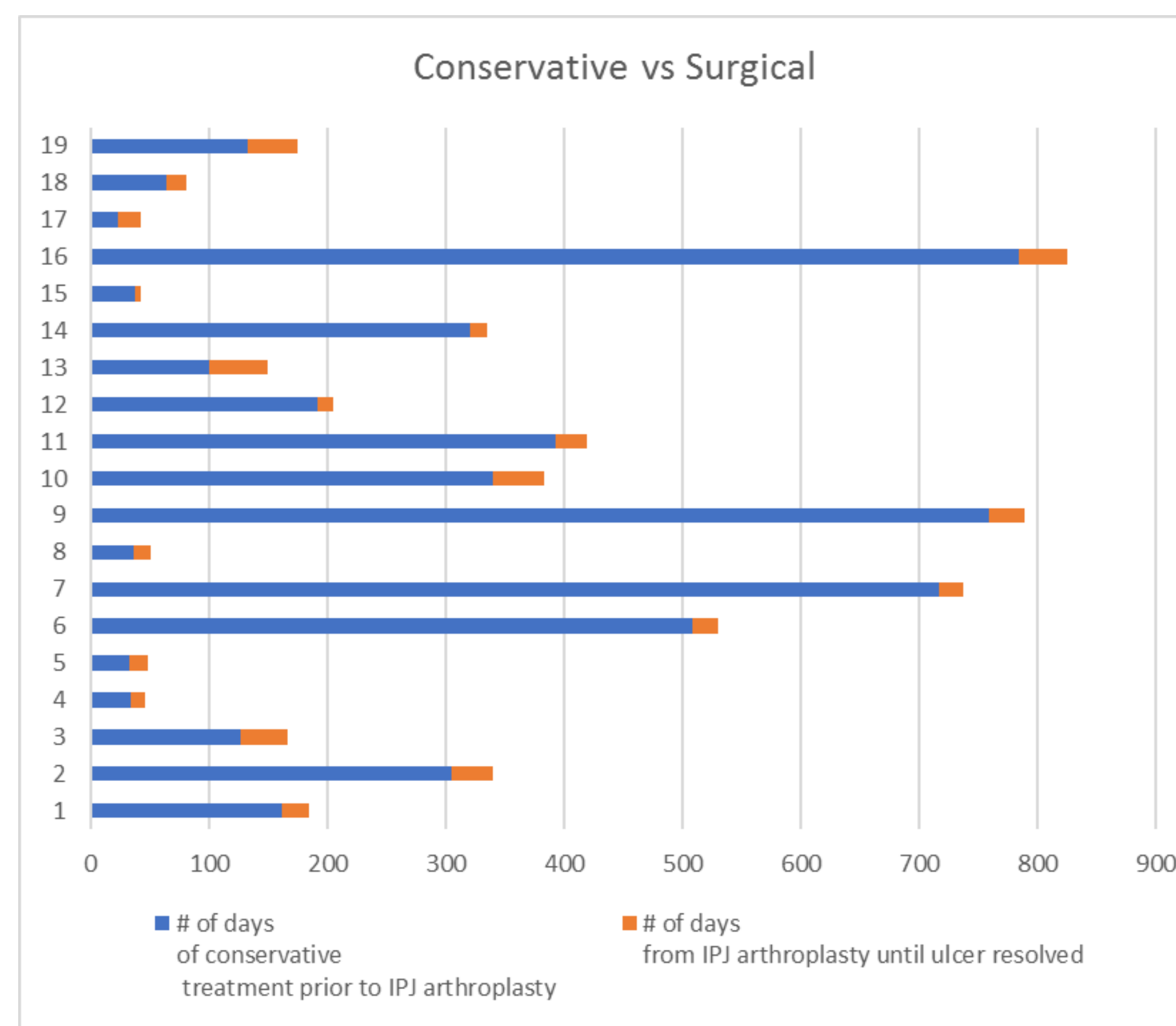


Table 2

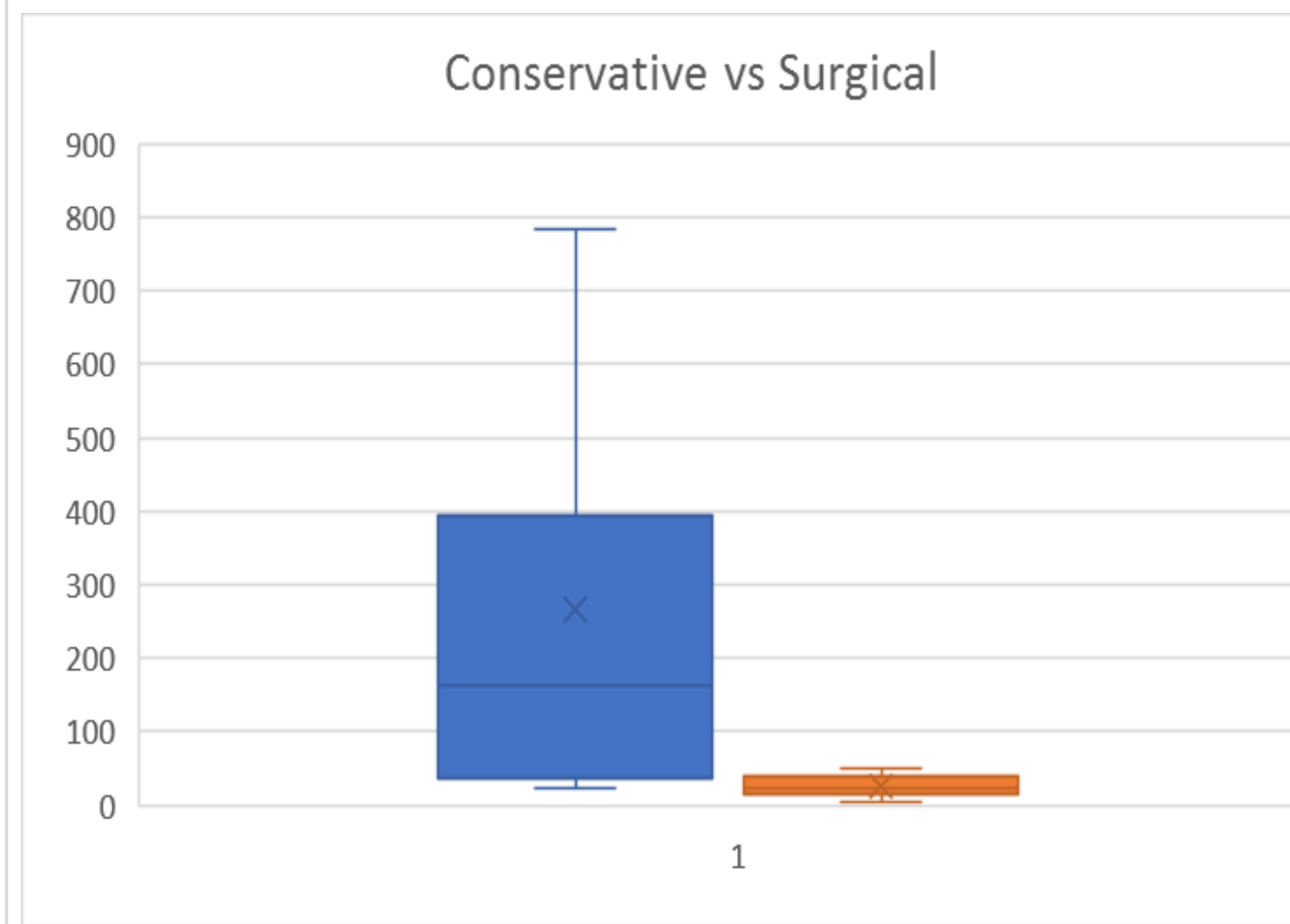


Table 3

Analysis and Discussion

To our knowledge only two previous studies have been published, one in 1994 and the other in 2015, on the topic of hallux intermetatarsal phalangeal joint arthroplasties for chronic ulcerations. We believe that this procedure is significantly underutilized and has showed great promise for healing these difficult wounds. Conservative treatment alone, i.e. local wound care and offloading, has a low success rate where there are increased areas of pressure due to osseous or biomechanical deformity. This arthroplasty allows for the pressure points of previous osseous deformity to be removed allowing the ulceration to resolve. This also leads to a decreased need for patient compliance to limit weightbearing. This procedure allows for future surgical options as well, such as fusion of the intermetatarsal phalangeal joint or amputation. The procedure is not technically demanding for the surgeon and is reproducible. The small incision site and also allows for quicker healing times of the surgical site with a decreased risk of dehiscence. Though this study was limited due to only having 17 patients being included in this study, for a total of 19 procedures performed, the fact that all healed without recurrence of ulcerations indicates that there should be an increase of use to this procedure.

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