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Statement of Purpose

The purpose of this study was to identify appropriate opioid prescribing guidelines for elective lapidus bunionectomies as well as associated risk factors for increased opioid use following this procedure.

Literature Review

The opioid epidemic has become one of the largest public health concerns recently. The reasons for this epidemic are multifactorial relating to patient satisfaction, expectations of pain relief and pharmaceutical marketing. (1)

Opioid-related overdoses had previously been shown to have increased by a factor of 5 between 2009 and 2016. (2) In 2016, 63,600 drug overdose deaths with 66% involving and opioid were reported. (3) In 2011, 500,000 emergency department visits were related to opioid use. (4) Due to this new public health crisis much attention has been directed to opioid prescribing patterns in orthopedic surgery. In an attempt to combat this crisis, the U.S. CDC have issued prescribing guidelines for primary care physicians, however, guidelines for surgical specialties have not been well established. (4)

Hallux valgus is one of the most common foot deformities presenting to a foot and ankle specialist with a prevalence ranging in the literature from 21%-70%. (4,5) Surgical correction of hallux valgus is one of the most common elective forefoot podiatric procedures with an estimated >200,000 surgical hallux valgus correction per year in the U.S. alone. (4)

One study showed the rate of new persistent opioid use in patients undergoing Lapidus bunionectomy to be 7.3%. (4) The authors also identified independent risk factors such as prescribing patterns, mental health diagnosis, and pain disorders to be associated with increased new persistent opioid use in opioid naïve patients. (4,6)

Methods

A search of the electronic medical record for all patients who had a lapidus bunionectomy procedure was performed between September 2016 to September 2018 by two surgeons. The search was performed using CPT code 28927, yielding a total of 55 patients (61 feet). A power calculation was performed, p<0.05 with 80% power and an α=0.05 yielding n=31.

34 charts were randomly selected and included in this study. Inclusion criteria was defined as patients who had a Lapidus bunionectomy with or without adjunct procedures. Exclusion criteria included previous bunion surgery on the ipsilateral foot.

All patients in this study were prescribed a minimum of seven days of opioid medication post-operatively. Opioid's prescribed included Acetaminophen/Hydrocodone, Acetaminophen/Oxycodone, and Tramadol. Our study analyzed the duration patients required opioid pain management and the risk factors associated with increased opioid use postoperatively. We used a Chi Squared test to determine any statistical significance between patient age, gender, comorbidities, and the length of time patients required opioid medication post-operatively.

34 patients were included in our study, 5 males (14.7%) and 29 females (85.3%). Median age of our patient population was 52 years of age ranging from 20 years old to 80 years old. 6 patients were current tobacco users (17.6%). Six patients had a diagnosis of diabetes mellitus (17.6%). Three patients were diagnosed with neuropathy (8.8%), two were diagnosed as diabetic neuropathy while one was diagnosed as idiopathic neuropathy. Eleven patients were diagnosed with an anxiety disorder (32.4%) while seven patients were diagnosed with depression (20.6%). Of these patients, five had a diagnosis of both anxiety and depression. Six patients were diagnosed with chronic low back pain (17.6%) and one was diagnosed with fibromyalgia (2.9%). A detailed breakdown of patient demographics and their post-operative pain regimen is included in Table 1.

Table 1: Demographics

Age	Gender	Tobacco	DM*	Neuro*	Anxiety	Depression	Fibromyalgia	CB Pain*	RX (days)	Medication
20	F								14	Norco 5/325
37	F								14	Norco 5/325
37	F				•	•			14	Norco 5/325
39	F								5	Ultram 50 mg
41	F				•	•		•	14	Norco 10/325
42	F								14	Norco 5/325
44	F								14	Percocet 10/325
44	F	•			•	•		•	21	Norco 7.5/325
45	F				•				14	Norco 5/325
46	F								7	Norco 5/325
49	M								7	Norco 5/325
51	F								7	Norco 5/325
51	F								14	Norco 7.5/325
51	F	•			•				14	Norco 5/325
51	F	•			•				14	Norco 5/325
52	F								7	Norco 5/325
52	F		•					•	14	Percocet 5/325
52	M					•		•	21	Norco 7.5/325
54	F								7	Norco 7.5/325
55	F								10	Norco 5/325
55	M	•							14	Norco 5/325
56	F								14	Norco 5/325
56	M		•						14	Norco 5/325
56	F	•						•	14	Norco 7.5/325
57	F								7	Norco 7.5/325
57	F			•		•			14	Norco 5/325
61	F		•						14	Norco 10/325
63	M		•	•					14	Norco 7.5/325
66	F				•				7	Norco 7.5/325
67	F				•	•			7	Norco 5/325
67	F	•	•					•	14	Norco 5/325
74	F		•	•	•		•		14	Norco 7.5/325
80	F				•	•			14	Norco 5/325

*Diabete Mellitus,*Neuropathy,*Chronic Back Pain

Table 2: Analysis

	< 50 yo	≥50 yo	Male	Female	DM*	Neuro*	Tobacco	Anxiety	Depression	Fibromyalgia	CB Pain*	Complication
2 weeks	10	22	4	28	6	3	5	10	5	1	4	4
>2 weeks	1	1	1	1	0	0	1	1	2	0	2	1
	P=0.94	P=0.38	P=0.44	P=0.25	P=0.42	P=0.57	P=0.57	P=0.94	P=0.09	P=0.74	P=0.04	P=0.44

Results

Two patients required greater than 14 days of post-operative opioid pain management (5.8%). Of the two patients who required greater than 14 days of post-operative opioid medication, one experienced wound dehiscence post-operatively requiring local wound care which healed without complication. The other had no known post-operative complications. Neither required additional surgery.

Of the comorbidities included in this study, only chronic low back pain was statistically significant for an increased risk of requiring greater than 14 days of post-operative opioid pain management (p=0.04). There was no significant increase in risk related to the other comorbidities included in this study or in post-operative complications (Table 2).

18 patients had an adjunctive procedures. One of those patients required opioid pain management beyond 14 days (p=0.5). 5 patients experienced post-operative complications and 1 went on to require a first metatarsophalangeal joint hemi-implant due to joint pain.

Discussion

It's suggested that a benchmark of 30 pills be prescribed to patients undergoing foot and ankle surgery.(1) Similarly, we found 2 weeks duration of opioid medication following Lapidus bunionectomy is adequate for most patients.

Legislative efforts have been shown to reduced opioid prescribing and this would suggest that preoperative counseling and strict institutional policies may have a similar effect on opioid prescriptions.(2) We believe that 2 weeks of postoperative opioid medication along with institutional policies and preoperative counseling will effectively control post-operative pain while mitigating opioid-related adverse events in Lapidus bunionectomy procedures

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