Wound Complications Following Anterior-Approach Total Hip Arthroplasty

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INTRODUCTION: Wound complications are one of the few disadvantages of the anterior approach for total hip arthroplasty (THA). Wound breakdown is attributable to various factors including the thinner, more fragile skin of the anterior thigh coupled with the moist environment of the groin crease, particularly if there is a large pannus. The purpose of this study is to enumerate the rate and risk factors of wound complications after anterior THA as well as the clinical course for patients with this complication. Additionally, we outline our treatment protocol for these wounds.
METHODS: A retrospective review of 573 total hip arthroplasties was conducted from June 2020 to October 2024. Wound complications were recorded and compared to patient demographics and comorbidities. Wound characteristics and whether there was a prosthetic joint infection (PJI) were also recorded. Wounds were treated per surgeon's preference with a combination of antibiotics, dry dressings, negative pressure therapy, and irrigation and debridement, with primary or delayed closure. The wounds were followed for 2 weeks, and then every 1-2 weeks until resolution.
RESULTS: There were 33 (6.11%) wound complications in the cohort that healed in an average of 60.1 +/- 39.9 days. Wound complications increased in patients with avascular necrosis versus osteoarthritis (12.5% vs 5.2%, p=0.02), rheumatoid arthritis versus osteoarthritis (50% vs 5.2%, p=0.007), use of enoxaparin vs aspirin (42% vs 5.5%, p<0.001), and body mass index >/= 35 (18.9% vs 3.6%, p<0.001). Having a wound complication was a risk factor for PJI (9.1% vs 0.7%, p<0.001). Having substantial drainage from the wound was a risk factor for PJI (75% vs 0%, p<0.001).
DISCUSSION: Wound complications are a relatively common occurrence after anterior THA, with certain patient and treatment factors contributing disproportionately to risk. Our data suggest that modifiable risk factors, particularly anticoagulation choice and obesity, should be considered in perioperative planning and patient counseling. Furthermore, persistent or substantial drainage from the wound is strongly associated with PJI and should prompt urgent evaluation and intervention. These findings reinforce the importance of vigilant wound monitoring and highlight opportunities for risk stratification and individualized management to reduce morbidity after anterior THA.
SIGNFICANCE: Wound breakdown leading to PJI remains a devastating complication of THA. This study quantifies the risk associated with the anterior approach and identifies clinical and patient-specific factors that predispose to wound complications. Recognition of modifiable risk factors and early identification of high-risk wound drainage patterns may allow for timely intervention and prevention of PJI.
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IMAGES AND TABLES:

Variable			Wound Complication			
		n (%)	Y	N	%	p-value
Mean Age, years			59.7	60.6		0.93
Mean BMI, kg/m²			**33.1**	**28.6**		**<0.001**
Sex	Male	265 (46.2)	16	249	6	0.79
	Female	308 (53.8)	17	291	5.5	
Teaching Case	Yes	526 (91.8)	31	495	5.9	0.64
	No	47 (8.2)	2	45	4.3	
Immunosuppressed	Yes	484 (84.5)	25	459	5.2	0.99
	No	89 (15.5)	8	81	9	
Diabetes Mellitus	Yes	501 (87.4)	27	474	5.4	0.32
	No	72 (12.6)	6	66	8.3	
PVD	Yes	560 (97.7)	31	529	5.5	0.13
	No	13 (2.3)	2	11	15.4	
CKD	Yes	549 (95.8)	32	517	5.8	0.73
	No	24 (4.2)	1	23	4.2	
Non-Aspirin	Yes	486 (84.8)	27	459	5.6	0.62
	No	87 (15.2)	6	81	6.9	
Non-OA Dx	Yes	402 (70.2)	21	381	5.2	0.4
	No	171 (29.8)	12	159	7	
ASA	1	32 (5.6)	1	31	3.1	0.51
	2	362 (63.2)	20	342	5.5	
	3	177 (30.9)	12	165	6.8	
	4	2 (0.3)	0	2	0	
CCI	<3	307 (73.3)	17	290	5.5	0.21
	>/= 3	112 (26.7)	10	102	8.9	

Table 1: Demographic and clinical characteristics.

	Wound Complication				
Diagnosis	n (%)	Y	N	% Yes	p-value
OA	402 (70.2)	21	381	5.2	
AVN	**64 (11.2)**	**8**	**56**	**12.5**	**0.03**
FAI	38 (6.6)	2	36	5.3	0.44
Dysplasia	33 (5.8)	1	32	3	0.33
Fracture	26 (4.5)	0	26	0	0.23
Post Traumatic	3 (0.5)	0	3	0	0.36
RA	**2 (0.35)**	**1**	**1**	**50**	**0.01**
Ankylosing Spondylitis	2 (0.35)	0	2	0	0.38
Hemochromatosis	2 (0.35)	0	2	0	0.38
Perthes	1 (0.15)	0	1	0	0.39

Table 2: Wound complications by primary diagnosis.

Anticoagulation		Wound Complication			
Agent	n (%)	Y	N	% Yes	p-value
Aspirin	488 (85.2)	27	461	5.5	
apixaban	44 (7.7)	2	42	4.5	0.46
heparin	14 (2.4)	0	14	0	0.25
warfarin	11 (1.9)	1	10	9.1	0.38
rivaroxaban	9 (1.6)	0	9	0	0.31
enoxaparin	**7 (1.2)**	**3**	**4**	**42.9**	**<0.001**

Table 3: Wound complications by anticoagulant use.