II Congreso
Sociedad Hispanoamericana de Hernia
3, 4 y 5 de mayo de 2018
Aula Magna de la Fundación Jiménez Díaz
Madrid - España

Manejo de la infección en el posoperatorio inmediato

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Infección del sitio quirúrgico (ISQ) 0,7 - 26.6%

SURGICAL INFECTIONS
Volume 19, Number 3, 2018
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DOI: 10.1089/sur.2017.233

Original Article

Impact of Surgical Site Infections
on Elective Incisional Hernia Surgery:
A Prospective Study

Montserrat Juvany, Carlos Hoyuela, Miguel Trias, Fernando Carvajal, Jordi Ardid, and Antoni Martrat

Hernia
https://doi.org/10.1007/s10029-018-1748-6

ORIGINAL ARTICLE

A call for standardization of wound events reporting following ventral hernia repair

I. N. Haskins[1,3] · C. M. Horne[1] · D. M. Krpata[1] · A. S. Prabhu
B. K. Poulose[2] · M. J. Rosen[1]

Received: 22 September 2017 / Accepted: 25 January 2018
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82% no hablan el "mismo idioma"

Table 2 Definitions and examples of the standardized definitions of postoperative wound events following ventral hernia repair

Surgical site infection	Surgical site occurrence	Procedural interventions
Definition: an infection that occurs in the part of the body (abdominal wall) where the surgery took place and is further defined based on the compartment involved. Examples include wound purulent drainage or infected synthetic or biologic mesh	Definition: includes any surgical site infection as well as any of the additional examples listed below	Definition: any surgical site occurrence that requires a procedural intervention as described below
Examples	Examples	Examples
Superficial	Wound cellulitis	Wound opening
Deep	Non-healing incisional wound	Wound debridement
Organ	Fascial disruption	Suture excision
	Skin/soft tissue ischemia	Percutaneous drainage
	Skin/soft tissue necrosis	Partial mesh removal
	Wound serous drainage	Complete mesh removal
	Chronic sinus drainage	
	Localized stab wound infection	
	Seroma	
	Hematoma	
	Exposed biologic mesh	
	Exposed synthetic mesh	
	Mucocutaneous anastomotis disruption	
	Enterocutaneous fistula	

Factores de Riesgo

Localización de la hernia

Recurrencia

Abordaje

Localización de la prótesis

Factores de Riesgo dependientes del paciente

Risk factors and clinical care processes assessed.

Non-Modifiable Patient Factors	Potentially Modifiable Patient Factors	Care Process Factors
Age (years)	Body Mass Index	Preoperative Hospitalization
Gender	Tobacco Use	Operative Time
Mesh in Place Preoperatively	Albumin Level (gm/dl)	Antibiotic Used
Open Wound Preoperatively	American Society of Anesthesiologists Classification	Antibiotic Duration (in hrs.)
Diabetes Mellitus		Skin Preparation
Glomular Filtration Rate		Other Procedures During Hernia Repair
Emergency Operation		Open/Laparoscopic Repair
Wound Classification		Usage of Mesh
Recurrent Hernia		Type of Mesh
Hernia Type		Skin Closure Method
Hernia Size		Skin Closure Suture Type
Enterocutaneous Fistula		Usage of Drains
		Type of Dressing
		Blood Loss

Am J Surg. 2017 Nov;214(5):838-843. doi: 10.1016/j.amjsurg.2017.07.017. Epub 2017 Jul 19.

Effects of modifiable, non-modifiable and clinical process factors in ventral hernia repair surgical site infections: A retrospective study.

Chipko J[1], DeSantis A[1], Quinn E[1], Velanovich V[2].

Factores de Riesgo – Localización de la hernia

TABLE 3. Comparison of Surgical Site Infection (SSI) Rates after Hernia Repair by Site (n = 119,973)

	Inguinal/femoral hernia repair		Umbilical hernia repair		Incisional/ventral hernia repair		
Hernia surgical approach	SSI, no. (%)	Total procedures	SSI, no. (%)	Total procedures	SSI, no. (%)	Total procedures	*P*[a]
Either approach	35[illegible] (0.45)	77,666	2[illegible]8 (1.16)	24,917	71[illegible] (4.11)	17,390	<.001
Open	295 [illegible]	61,142	284 [illegible]	24,033	701 [illegible]	16,699	<.001
Laparoscopic	57 (0.34)	16,524	4 (0.45)	884	14 (2.03)	691	<.001[b]

Infect Control Hosp Epidemiol. 2015 Mar;36(3):329-35. doi: 10.1017/ice.2014.44.

Stratification of surgical site infection by operative factors and comparison of infection rates after hernia repair.

Olsen MA[1], Nickel KB[1], Wallace AE[2], Mines D[2], Fraser VJ[1], Warren DK[1].

Author information

Factores de Riesgo – Recurrencia

TABLE 3. Recurrence and Risk Baseline Factors for Postoperative Hernia Recurrence

Variables	Intent-to-treat Population (n = 104)		
Hernia Recurrence, n (%)	16 (15.4)		
Risk Baseline Factors	Patients With Hernia Recurrence (n = 16)	Patients Without Hernia Recurrence (n = 88)	*P*
BMI (kg/m^2), mean (range)	30 (22–39)	27 (17–40)	0.046
Defect length (cm), mean (range)	11 (5–20)	15 (3–27)	0.044
Postoperative superficial incisional wound infection, n (%)	5 (31%)	4 (5%)	0.004

ORIGINAL ARTICLE

OPEN

Multicenter, Prospective, Longitudinal Study of the Recurrence, Surgical Site Infection, and Quality of Life After Contaminated Ventral Hernia Repair Using Biosynthetic Absorbable Mesh

The COBRA Study

Michael J. Rosen, MD, Joel J. Bauer, MD,† Marco Harmaty, MD,† Alfredo M. Carbonell, DO,‡ William S. Cobb, MD,‡ Brent Matthews, MD,§ Matthew I. Goldblatt, MD,¶ Don J. Selzer, MD, MS,|| Benjamin K. Poulose, MD, MPH,** Bibi M. E. Hansson, MD, PhD,†† Camiel Rosman, MD,†† James J. Chao, MD,‡‡ and Garth R. Jacobsen, MD§§*

Factores de Riesgo – Urgencia/Programada

TABLE 4. Comparison of Surgical Site Infection (SSI) Rates after Hernia Repair by Bowel Obstruction/Necrosis

	No bowel obstruction/necrosis		Bowel obstruction/necrosis		
Hernia site and surgical approach	SSI no. (%)	Total procedures	SSI no. (%)	Total procedures	P^a
Inguinal/femoral, laparoscopic	5[illegible] (0.33)	15,635	[illegible] (0.56)	889	.234[b]
Inguinal/femoral, open	24[illegible] (0.44)	55,720	4[illegible] (0.89)	5,422	<.001
Umbilical	15[illegible] (0.95)	16,562	13[illegible] (1.57)	8,355	<.001
Incisional/ventral	49 (4.16)	11,805	22 (4.01)	5,585	.645

Infect Control Hosp Epidemiol. 2015 Mar;36(3):329-35. doi: 10.1017/ice.2014.44.

Stratification of surgical site infection by operative factors and comparison of infection rates after hernia repair.

Olsen MA[1], Nickel KB[1], Wallace AE[2], Mines D[2], Fraser VJ[1], Warren DK[1].

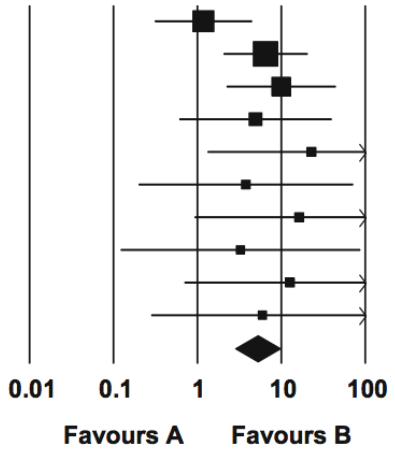
Author information

Factores de Riesgo - Abordaje

ABIERTA VS LAPAROSCOPICA EN HERNIAS INCISIONALES

SSI

Study name	Odds ratio	Lower limit	Upper limit	Z-Value	p-Value
Eker	1.184	0.308	4.550	0.246	0.806
Kurmann	6.500	2.029	20.824	3.151	0.002
Itani	9.965	2.200	45.142	2.983	0.003
Wolter	4.932	0.603	40.338	1.488	0.137
Ceccarelli	22.873	1.311	399.200	2.145	0.032
Zografos	3.786	0.198	72.499	0.884	0.377
Olmi	16.338	0.918	290.768	1.902	0.057
Navarra	3.261	0.120	88.347	0.702	0.483
Bencini	12.701	0.694	232.532	1.713	0.087
Park	5.947	0.279	126.942	1.142	0.254
	5.162	2.786	9.566	5.216	0.000

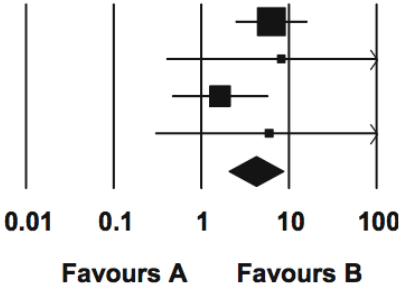


A: Laparoscopic repair, B: Open repair

ABIERTA VS LAPAROSCOPICA EN HERNIAS PRIMARIAS

SSI

Study name	Odds ratio	Lower limit	Upper limit	Z-Value	p-Value
Liang	6.317	2.435	16.391	3.789	0.000
Othman	8.200	0.396	169.899	1.361	0.174
Solomon	1.644	0.459	5.888	0.764	0.445
Bencini	5.955	0.295	120.212	1.164	0.245
	4.166	2.030	8.551	3.889	0.000



A: Laparoscopic repair, B: Open repair

Surg Endosc
DOI 10.1007/s00464-014-3859-1

Laparoscopic repair reduces incidence of surgical site infections for all ventral hernias

Nestor A. Arita · Mylan T. Nguyen · Duyen H. Nguyen · Rachel L. Berger · Debbie F. Lew · James T. Suliburk · Erik P. Askenasy · Lillian S. Kao · Mike K. Liang

Factores de Riesgo – Localización de la prótesis

Table 4 Multiple treatments meta-analysis

	OR	95 % credible interval	Probability of being the best among four treatments	Rank
Recurrence[a]				
Onlay (reference)			<0.001	3, 4
Inlay	3.946	0.49–13.26	<0.001	3, 4
Sublay	0.218	0.06–0.47	0.942	1
Underlay	0.590	0.07–1.50	0.058	2
SSI[b]				
Onlay (Reference)			<0.001	4
Inlay	1.113	0.09–3.83	0.113	3
Sublay	0.449	0.12–1.16	0.773	1
Underlay	0.878	0.29–1.99	0.114	2

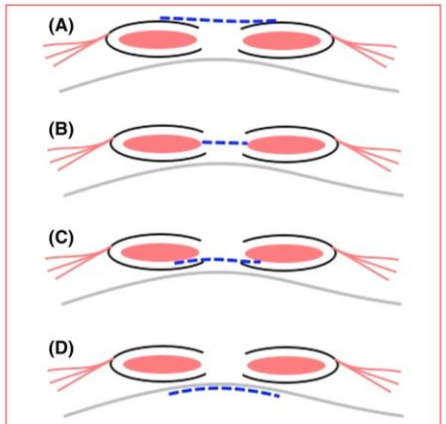


Fig. 1 Mesh location. **a** onlay repair, **b** inlay repair, **c** sublay repair, **d** underlay; *Key blue* mesh *red* muscle *black* fascia *gray* hernia sac

World J Surg
DOI 10.1007/s00268-015-3252-9

SCIENTIFIC REVIEW

Mesh Location in Open Ventral Hernia Repair: A Systematic Review and Network Meta-analysis

Julie L. Holihan[1] · Duyen H. Nguyen[1] · Mylan T. Nguyen[1] · Jiandi Mo[1] · Lillian S. Kao[1] · Mike K. Liang[1]

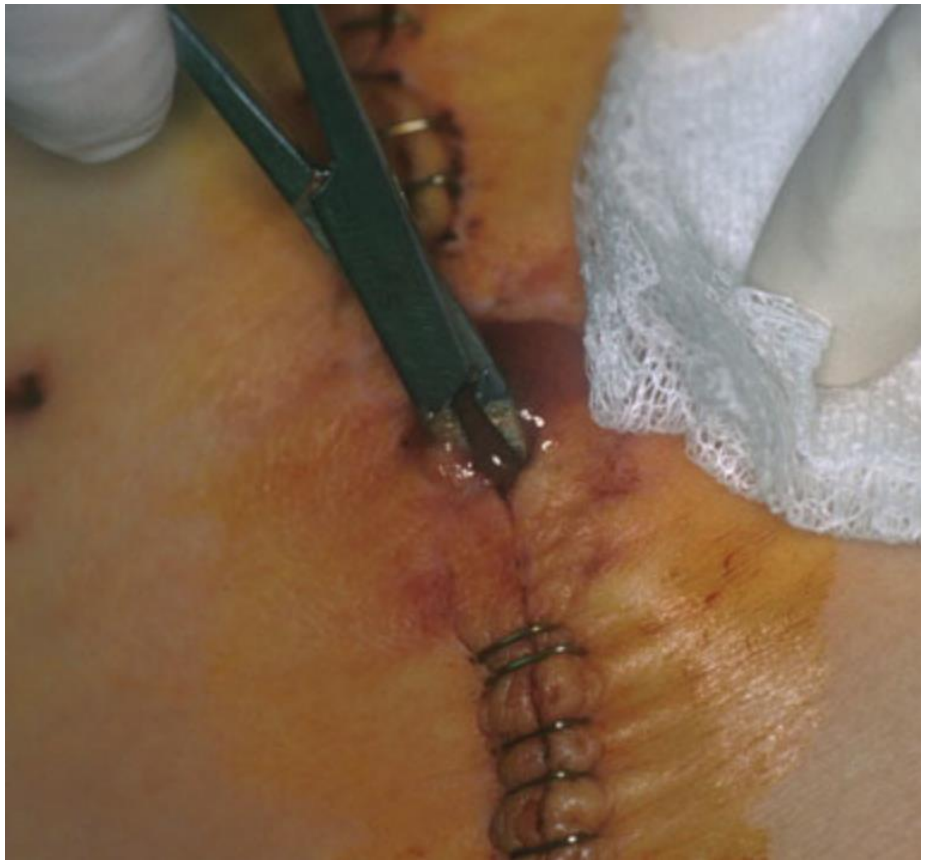
¿Qué hacer ante una infección aguda en el posoperatorio inmediato?

Capítulo 16

Prevención y tratamiento de la infección de la prótesis en la reparación de la hernia abdominal. El papel de las terapias de vacío

Miguel Caínzos Fernández
Providencia García Pastor
Fernando Carbonell Tatay

Distinguir entre la presencia de una infección superficial de la herida y una infección profunda.



ISQ SUPERFICIAL

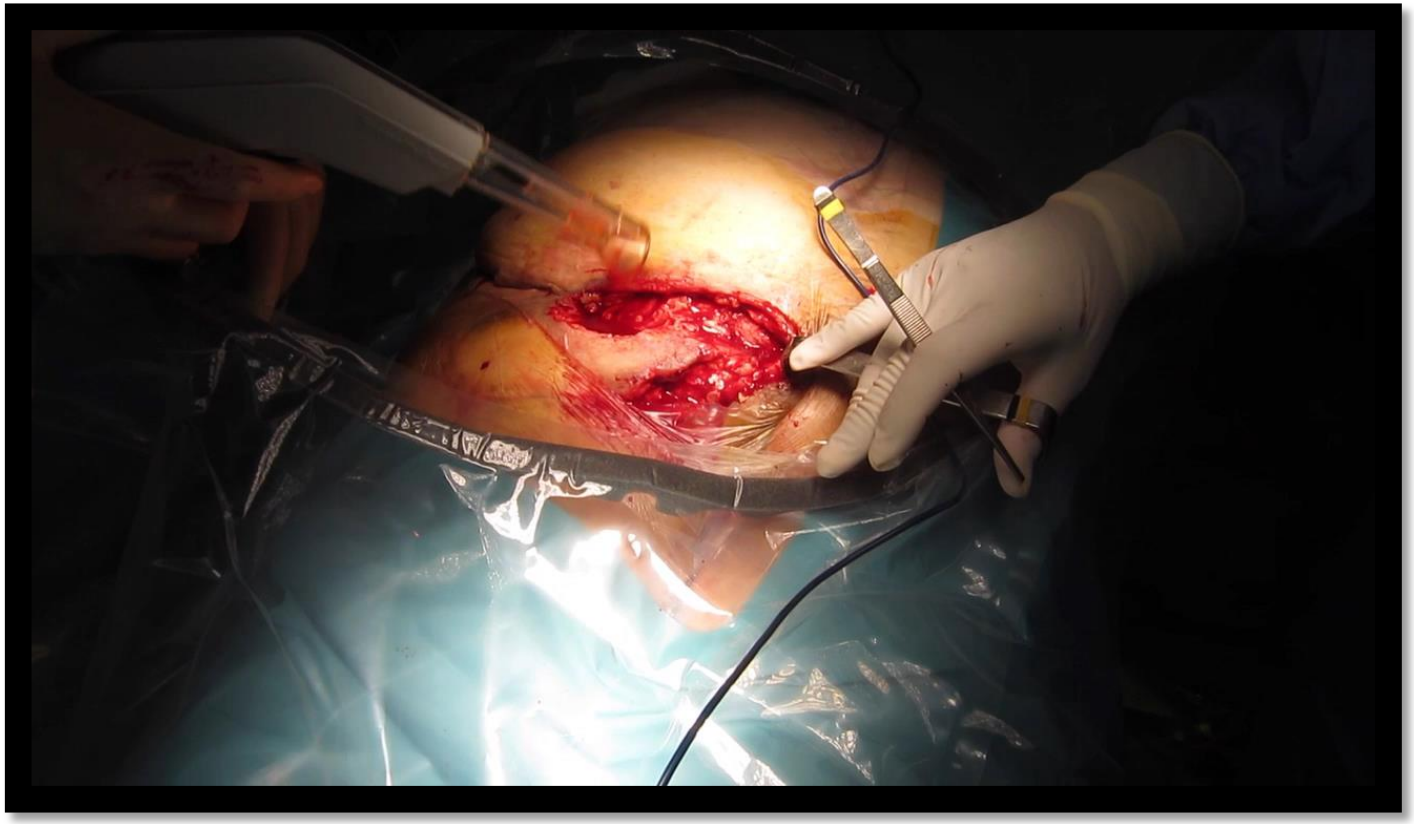
(30 d) piel / TCSC
+
Drenaje purulento o Cultivo positivo
+
Signos locales

ISQ PROFUNDA

(30-90 d) músculo/aponeurosis
+
Drenaje purulento o dehiscencia de la herida o cultivo positivo
+
síntomas sistémicos

TRATAMIENTO:

- Desbridamiento quirúrgico + ATB + cierre herida con drenajes



TRATAMIENTO:

- Cierre 2º intención + TPN

TERAPIA PRESION NEGATIVA

- Eliminar el exudado y los materiales infecciosos.
- Facilitar la granulación del tejido.
- Reaproximación de los bordes de la herida

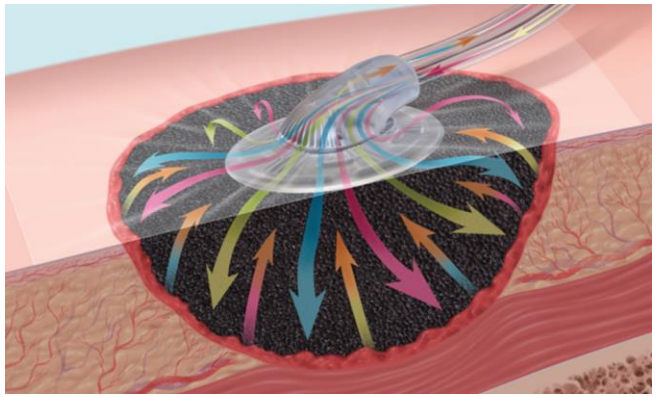
Precauciones:

- Hemorragia activa
- Hemostasia difícil en la herida
- Tratamiento anticoagulante

Fernando Carbonell Tatay. Prevención y tratamiento de la infección de la prótesis en la reparación de la hernia abdominal. El papel de las terapias de vacío. Libro de Eventraciones y otras Hernias de la pared y de la cavidad abdominal. España - 2013

TERAPIA PRESION NEGATIVA CON INSTILACIÓN

- Elimina el exudado.
- Limpia el lecho de la herida.
- Instila soluciones de forma controlada.



Fernando Carbonell Tatay. Prevención y tratamiento de la infección de la prótesis en la reparación de la hernia abdominal. El papel de las terapias de vacío. Libro de Eventraciones y otras Hernias de la pared y de la cavidad abdominal. España - 2013

Los apósitos con terapia de presión negativa previenen la infección del sitio quirúrgico?

Hernia
DOI 10.1007/s10029-014-1312-y

ORIGINAL ARTICLE

Positive outcomes with negative pressure therapy over primarily closed large abdominal wall reconstruction reduces surgical site infection rates

A. Gassman · A. Mehta · E. Bucholdz · A. Abthani · O. Guerra · M. M. Maclin Jr · T. Esposito · C. Thomas

Received: 1 August 2013 / Accepted: 12 September 2014
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Table 3 Surgical outcomes based on wound closure

Surgical outcomes: based on wound closure	Primary ($n = 32$)	PVC ($n = 29$)	Chi-squared
Hematoma ($n = 2$)	2	0	0.49
Seroma ($n = 6$)	3	3	1.00
Skin flap necrosis ($n = 5$)	2	3	0.67
Surgical site infection (SSI) ($n = 22$)	17	5	***0.01***
Mesh removal ($n = 3$)	3	0	0.24
Hernia recurrence ($n = 8$)	7	1	***0.05***

Table 2 Postoperative outcome

	pNPWT ($n = 32$) (%)	Control ($n = 34$) (%)	p	OR
Surgical site infections (overall)	12 (38)	19 (56)	0.135	
Wound infection (superficial/deep according to CDC)	7 (24) ($n = 29$)	16 (51) ($n = 31$)	**0.029**	0.30 (95% CI 0.10–0.90)
Incisional wound infection	2 (7)	15 (48)	**<0.001**	0.08 (95% CI 0.02–0.39)
Subcutaneous abscesses	5 (17)	4 (13)	0.660	
Bowel content leakage	5 (16)	4 (12)	0.648	
Anastomotic leakage	2 (10) ($n = 21$)	4 (19) ($n = 21$)	0.378	
Transient small bowel laceration[a]	3 (9)	0 (0)	0.068	
Intra-abdominal abscess[b]	4 (13)	2 (6)	0.350	
Enterocutaneous fistula	3 (9)	3 (9)	0.938	
Non-infected seroma	5 (16)	7 (21)	0.452	
Bleeding/hematoma	4 (13)	6 (18)	0.560	
Wound dehiscence needing NPWT	6 (19)	7 (21)	0.666	
Necrosis partial skin/subcutis	1 (3)	3 (9)	0.332	
Interventions extra-abdominal				
Radiologic subcutaneous drainage	7 (22)	8 (24)	0.873	
Opening wound and/or antibiotics[c]	2 (7) ($n = 29$)	15 (48) ($n = 31$)	**<0.001**	0.08 (95% CI 0.02–0.39)
Intervention for intra-abdominal complications				
Radiologic intra-abdominal drainage	9 (28)	8 (24)	0.670	
Relaparotomy	0 (0)	2 (6)	0.262	
Hospital stay days (IQR)	19 (9–35)	12 (8–22)	0.161	
Range	(5–120)	(2–105)		
Emergency department visit	9 (28)	13 (38)	0.223	
Re-admission	4 (13)	6 (18)	0.492	
30-day mortality	0 (0)	0 (0)	–	

Bold values indicate p-value significant if less than 0.05

Disminuir los factores de riesgo modificables en el paciente

PREVENCIÓN

Aumentar los cuidados perioperatorios del paciente

Conclusiones

- Factores de riesgo modificables para disminuir ISQ.
- Más ISQ en hernias umbilicales y eventraciones.
- Prótesis supraaponeurótica aumenta el riesgo de ISQ.
- Abordaje laparoscópico disminuye la ISQ.
- El Desbridamiento quirúrgico + ATB + cierre herida con drenajes es una buena opción terapéutica inicial.

Recomendaciones

-Técnica quirúrgica cuidadosa y meticulosa.

-Evitar hematomas y espacios.

-Manipular la prótesis lo mínimo posible que no esté en contacto con la piel.

-Evitar cuerpos extraños.

-Vigilar estado de los bordes de la herida y resecar si hay piel sobrante.

10-18% HERIDAS INFECTADAS
SUPERFICIALES DESARROLLARÁN BIOFILM

Gracias