X Congreso Cubano de Cirugía
Reunión Regional de la Federación Latinoamericana de Cirugía
Cirugía 2008
Del 2 al 5 de Diciembre de 2008
Palacio de Convenciones, La Habana, Cuba

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Mesh or not mesh. When and how?

The Guarnieri's method

Guarnieri Francesco MD

Smaldone Walter MD

Moscatelli Franco MD

Nwamba Calistus MD

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SETUP

Surgical Experience

Technique Used

Patient

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More than 100 techniques for inguinal hernia repair

NO MESH

- Bassini
- Shouldice
- Pomstempsky

MESH

- Lichtenstein
- Trabucco
- Stoppa
- Rives

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The mesh can be used as a

- **Reinforcement**
- **Substitute**

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Were to place the mesh ?

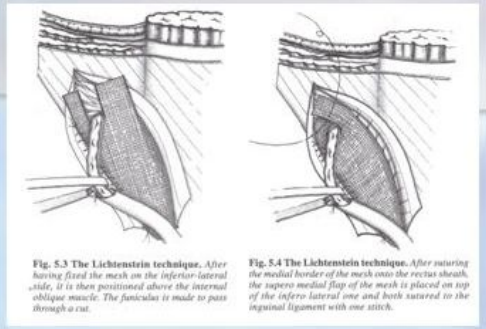

Fig. 5.3 The Lichtenstein technique. *After having fixed the mesh on the inferior-lateral side, it is then positioned above the internal oblique muscle. The funiculus is made to pass through a cut.*

Fig. 5.4 The Lichtenstein technique. *After suturing the medial border of the mesh onto the rectus sheath, the supero medial flap of the mesh is placed on top of the infero lateral one and both sutured to the inguinal ligament with one stitch.*

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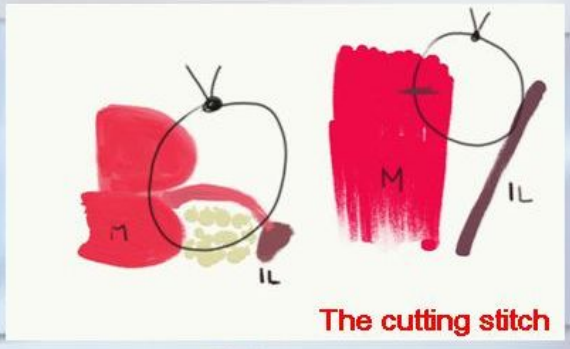
The Bassini's tecnique and the Tension Free



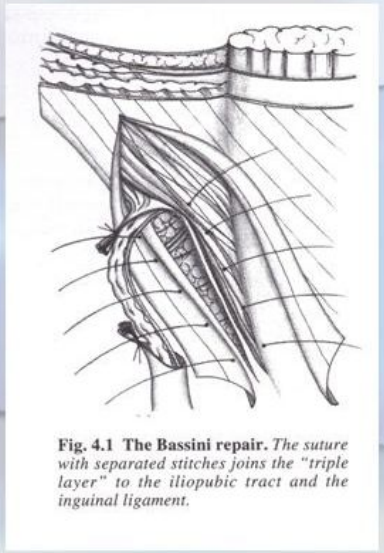


Fig. 4.1 The Bassini repair. *The suture with separated stitches joins the "triple layer" to the iliopubic tract and the inguinal ligament.*

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The Lichtenstein Tecnique

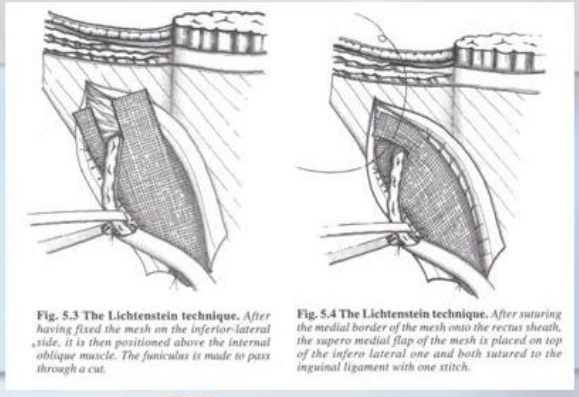

Fig. 5.3 The Lichtenstein technique. *After having fixed the mesh on the inferior-lateral side, it is then positioned above the internal oblique muscle. The funiculus is made to pass through a cut.*

Fig. 5.4 The Lichtenstein technique. *After suturing the medial border of the mesh onto the rectus sheath, the supero medial flap of the mesh is placed on top of the infero lateral one and both sutured to the inguinal ligament with one stitch.*

It is Tension Free at rest but not under stress

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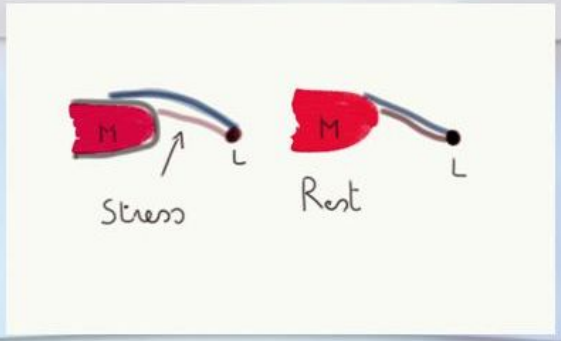
The Tension Free and the Guarnieri's technique



Laplace's law *applies to elastic cylindrical or spherical containers, which undergo an internal pressure greater than the external one: the relationship between the transmural pressure (P), the tension of the wall in a point (T) and the bend radius (r) of the wall in that point is T= P x r in a cylindrical container, T= P x r/2 in a spherical container.*

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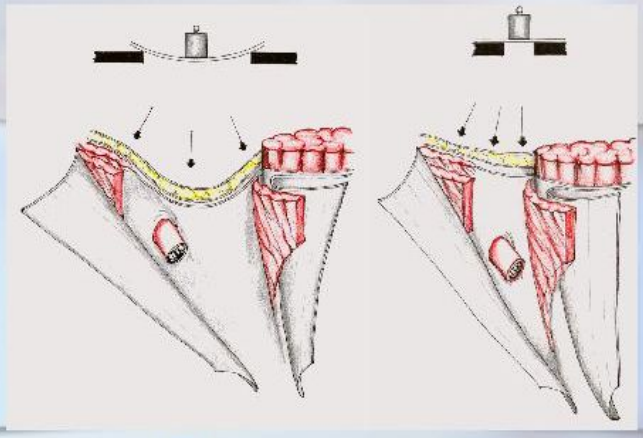
THE SAIL EFFECT and THE LAPLACE LAW



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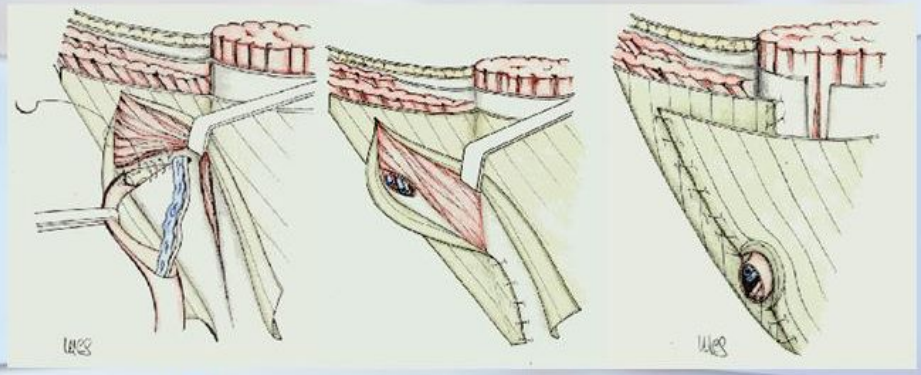
The Guarnieri's technique



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The Guarnieri's technique

- **Avoid suture tension under stress**
- **Reduce passive areas**
- **Modify the anatomy to preserve the physiology**
- **Avoid the use of the mesh**

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HERNIAS

Year	Hernias	Recurrent	External Oblique	Direct	Mixed	Femoral	Abdominal
1988	13	4	6	1	0	0	2
1989	134	8	84	25	7	4	6
1990	212	21	103	46	17	4	21
1991	196	18	112	30	22	2	12
1992	207	14	108	43	13	7	22
1993	243	30	116	45	31	4	17
1994	227	24	111	38	30	3	21
1995	255	19	117	50	41	5	23
1996	347	27	166	69	54	4	27
1997	271	22	110	53	56	5	25
1998	302	20	151	49	48	5	29
1999	323	29	152	60	51	8	23
2000	354	25	166	54	79	4	26
2001	393	17	202	97	41	3	33
2002	421	27	181	75	88	8	42
2003	409	26	158	63	101	9	52
2004	327	27	92	32	148	2	26
2005	279	11	72	27	131	5	33
2006	246	12	70	24	99	3	37
2007	248	15	62	21	107	6	38
2008	213	11	72	15	78	4	33
	5620	407	2411	917	1242	95	547

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Anesthesia for Inguinal Hernia

11% General

76% Local

13% Spinal

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Antonio Guarnieri

We are using the Antonio Guarnieri's technique. This technique can be used with or without mesh. We have 0.5 % recurrence rate (more than 5000 hernia operations for primary inguinal hernia). No recurrence was observed in patients treated with mesh (for primary hernia). This technique was developed on December 1988. From December 1988 to December 2003 we have performed more than 5000 hernia operation. The aim of this technique is to modify the anatomy preserving the physiology of the inguinal canal. It was first published on the American Journal of Surgery (164: 70-73, 1992). It is now well described on chapter eleven, Nyhus and Condon' s Hernia book fifth edition.
Antonio Guarnieri died on May 5th, 2003.

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When We have used the Mesh

Type	% mesh
Femoral	83,5
Indirect	16,31
Direct	14,23
Mixed	42,3
Recurrent	100

Why ?

- **Rigid hernia opening**
- **Tissutal distrophy**
- **Multiple hernia openings**
- **Wide opening**
- **Recurrent hernia**

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RECURRENCES
Primary Hernia

4665 Primary Hernias
1088 With Mesh (23 %)
3577 Without Mesh (77 %)

27 Recurrences

0% Recurrence With Mesh
0,75 % Recurrence Without Mesh

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RECURRENCES
Recurrent Hernia

407 Recurrent Hernias
With Mesh (100 %)

10 Rerecurrences

2,46 % Recurrence

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- **Postoperative Complications**
- **Primary hernias**: Seromas 6%, Hematoma 0,5 %, Transient Testicular Edema 0,4 %, Infections 0,3 %,
- Testicular Atrophy 0,2 %, Recurrences 0,58 %
- **Recurrent hernias:** Sieromas 15%, Hematoma 2,4 %, Infections 0,5 %, Testicular Atrophy 1 %,
- Recurrences 2,46 %

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TO AVOID RECURRENCE

The surgeon must: Research

- Reinforce passive areas (with mesh if necessary)
- Search concurrent subclinical primary hernias
- Avoid suture tension
- Reduce the surface of passive areas (the inguinal triangle)
- Calibrate the internal ring
- Have a good patient

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Thank you for your attention

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