MANEJO QUIRÚRGICO DEL HIPERPARATIROIDISMO

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OBJETIVOS/CONTROVERSIAS

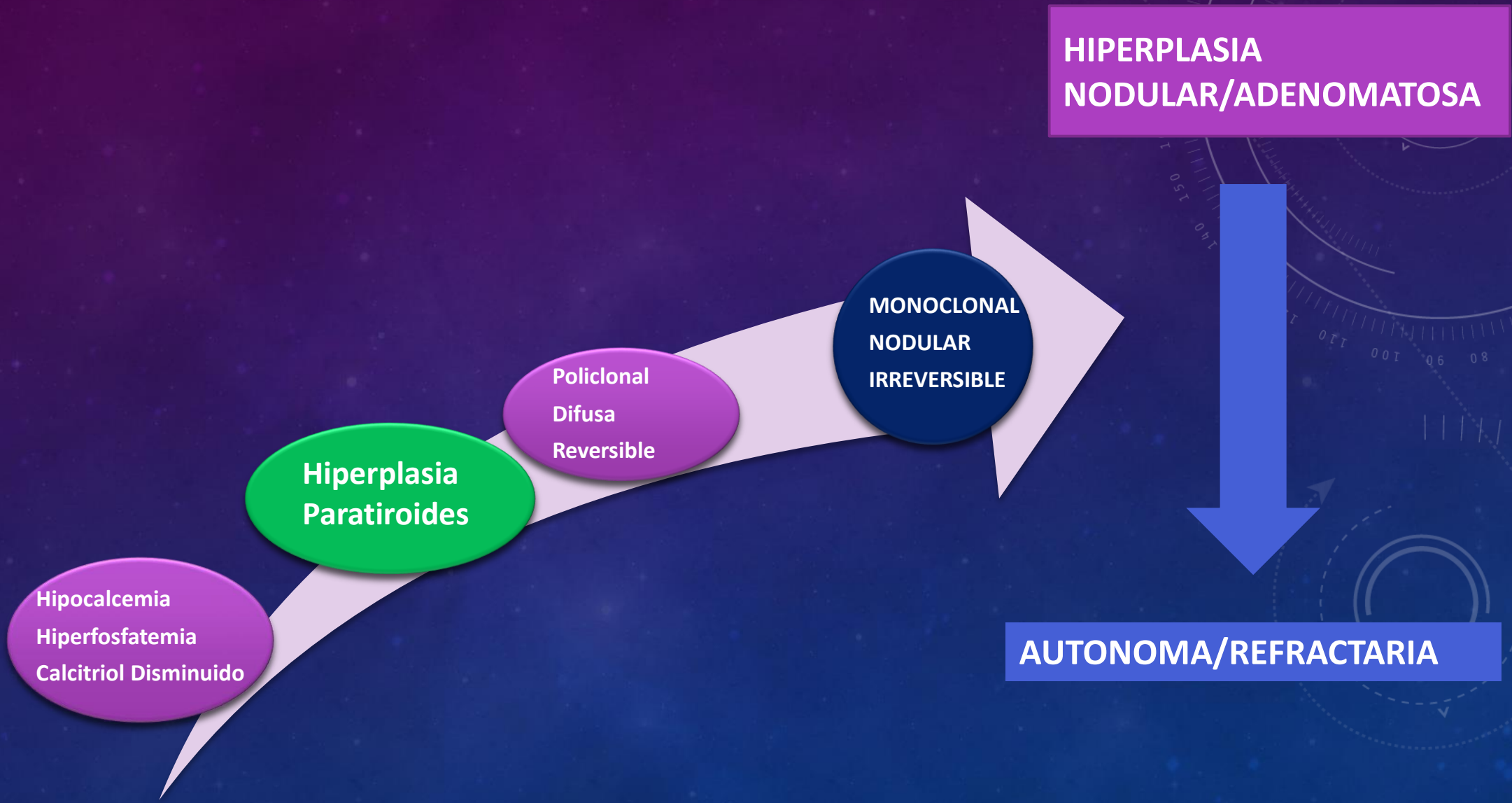
- INDICACIONES DE CIRUGÍA
- PROS/CONTRAS
- ESTUDIOS PREOPERATORIOS
- TÉCNICA QUIRÚRGICA
- FACTORES QUE DIFICULTAN CIRUGÍA
- RESULTADOS ÓPTIMOS DE CIRUGÍA
- RECURRENCIA

INDICACIONES DE CIRUGÍA

HIPERPARATIROIDISMO

RIESGO MORTALIDAD

HIPERPARATIROIDISMO/HIPER FOSFATEMIA REFRACTARIA AL TRATAMIENTO MEDICO


Hipocalcemia
Hiperfosfatemia
Calcitriol Disminuido
Hiperplasia Paratiroides
Policlonal
Difusa
Reversible
MONOCLONAL
NODULAR
IRREVERSIBLE
HIPERPLASIA NODULAR/ADENOMATOSA
AUTONOMA/REFRACTARIA

FALLO TERAPIA MEDICA

- **FRACASO AL CALCITRIOL CON O SIN CINACALCET**
- **INACEPTABLE EFECTO SECUNDARIO**
- **RESPUESTA BIOQUIMICA ADVERSA**

NEPHROLOGY

Nephrology **22**, Suppl. 2 (2017) 47–50

Parathyroid hormone targets in chronic kidney disease and managing severe hyperparathyroidism

CARMEL M HAWLEY[1,2,3,4] and STEPHEN G HOLT[5,6]

[1]Department Renal Medicine, Princess Alexandra Hospital, [2]Department Renal Medicine, University of Queensland, Brisbane, [3]Australasian Kidney Trials Network, University of Queensland, [4]Translational Research Institute, Woolloongabba, Brisbane, Queensland, [5]Department Nephrology, The Royal Melbourne Hospital, and [6]Department of Medicine, The University of Melbourne, Melbourne, Victoria, Australia

higher risk of hypocalcaemia and gastrointestinal adverse

Table 1 Trials of paricalcitol

Paricalcitol *vs.* placebo in both trials	PRIMO[2]	OPERA[3]
Stage of CKD	Stages 3 and 4	Stages 3–5 (not on dialysis) with LVH
Number of subjects	227	60
Time on study drugs	48 weeks	52 weeks
Efficacy in relation to PTH levels	Very effective	Very effective
Outcome- cardiac measures LVH and cardiac function	No efficacy signal	No efficacy signal
Secondary post-hoc analyses of CV-related hospitalisations	Lower in intervention arm	Lower in intervention arm
Hypercalcaemia incidence Intervention *vs.* placebo	20.9% *vs.* 0.9%	43.3% *vs.* 3.3%

Legend: PRIMO: Paricalcitol capsule benefits in Renal failure Induced cardiac MOrbidity. OPERA: Oral Paricalcitol in Stage 3–5 Chronic Kidney Disease LVH: left Ventricular hypertrophy. CKD, Chronic, Kidney Disease; CV, cardiovascular; PTH, parathyroid hormone.

FALLO TERAPIA MEDICA

- FRACASO AL CALCITRIOL CON O SIN CINACALCET
- INACEPTABLE EFECTO SECUNDARIO
- RESPUESTA BIOQUIMICA ADVERSA
- FRACASO AL EVOLCET

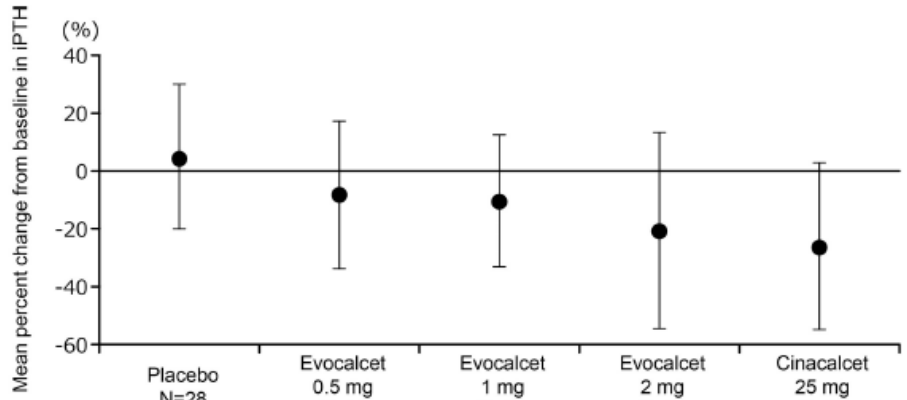
PLOS ONE

RESEARCH ARTICLE

Phase 2b study of evocalcet (KHK7580), a novel calcimimetic, in Japanese patients with secondary hyperparathyroidism undergoing hemodialysis: A randomized, double-blind, placebo-controlled, dose-finding study

Tadao Akizawa[1]*, Ryutaro Shimazaki[2], Masafumi Fukagawa[3], Evocalcet Study Group[¶]

1 Division of Nephrology, Department of Medicine, Showa University School of Medicine, Namics 301, Takanawa, Minato-ku, Tokyo, Japan, **2** R&D Division, Kyowa Hakko Kirin Co., Ltd., Tokyo, Japan, **3** Division of Nephrology, Endocrinology and Metabolism, Department of Internal Medicine, Tokai University School of Medicine, Kanagawa, Japan



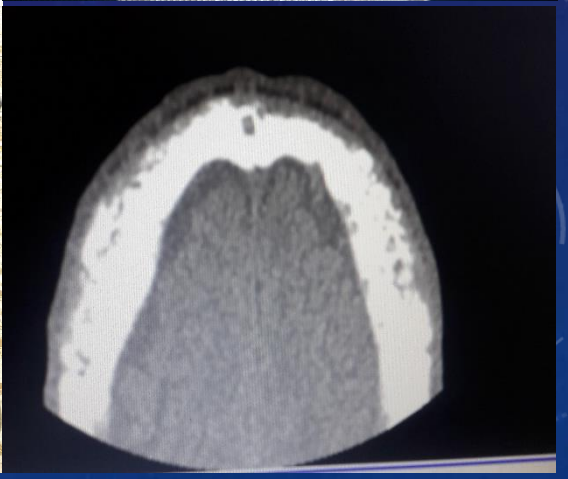
	Placebo N=28	Evocalcet 0.5 mg N=30	Evocalcet 1 mg N=30	Evocalcet 2 mg N=28	Cinacalcet 25 mg N=28
Baseline iPTH (pg/mL)	409.3±146.0	405.0±159.2	360.0±134.1	400.3±159.4	444.5±161.3
Percent change at EOT (%)	5.44±25.85	−8.40±25.43	−10.56±22.86	−20.16±34.23	−25.86±27.76
Difference from placebo (%)	—	−13.84	−16.00	−25.60	−31.30
95% CI	—	−28.08, 0.40	−30.24, −1.76	−40.08, −11.12	−45.78, −16.82
Difference from placebo (%)	—	17.46	15.30	5.70	—
95% CI	—	3.22, 31.70	1.06, 29.54	−8.78, 20.18	—

Fig 3. Point estimate of percent changes in iPTH at EOT. The error bars indicate standard deviation. iPTH, intact parathyroid hormone; EOT, end of treatment; CI, confidence interval.

FALLO A TERAPIA MEDICA

- DOLOR OSEO
- PERDIDA DE HUESO CORTICAL
- PRURITO
- FRACTURAS
- MIOPATIA PROXIMAL
- CALCIFILAXIS
- ENFERMEDAD VASCULAR CALCIFILICA

HPT SEVERO



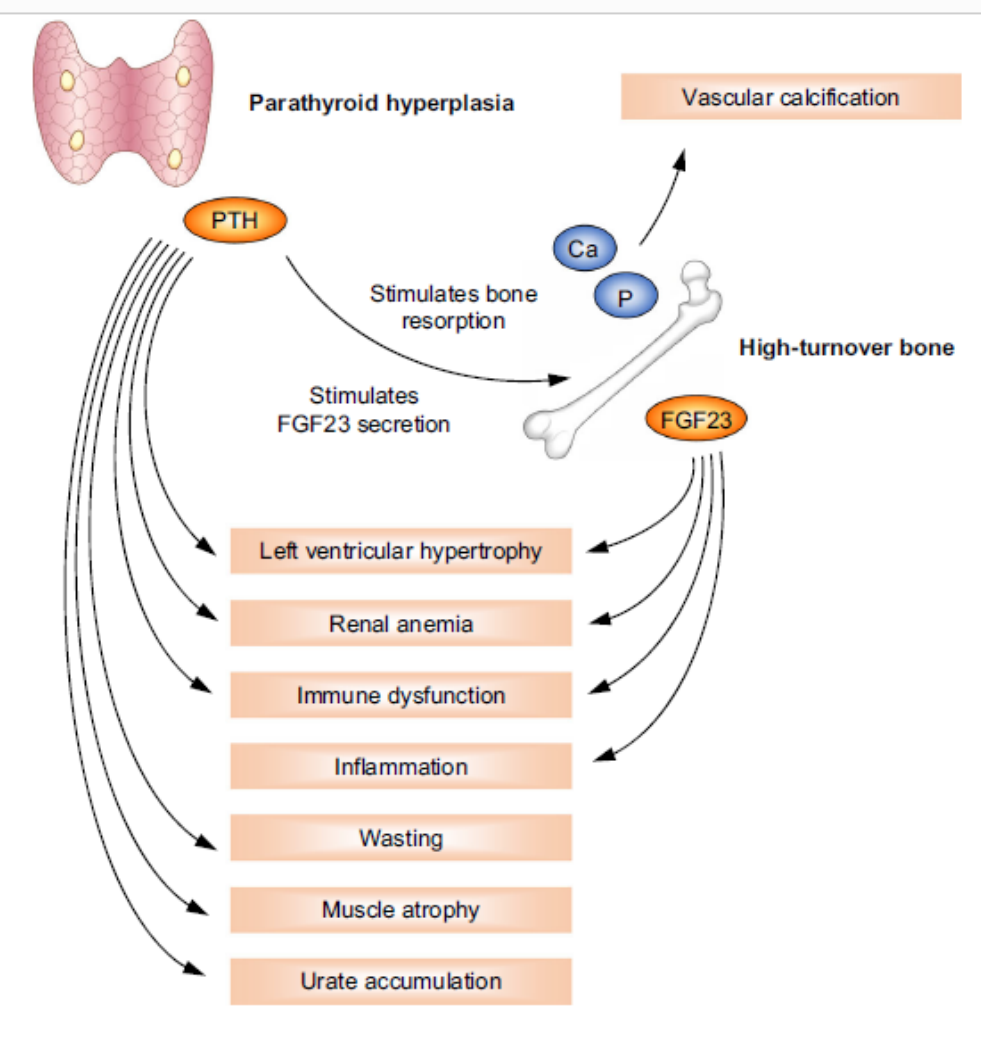
Therapeutic Apheresis and Dialysis 2018; 22(1):11–21
doi: 10.1111/1744-9987.12604

Review

Parathyroid Nodular Hyperplasia and Responsiveness to Drug Therapy in Renal Secondary Hyperparathyroidism: An Open Question

Carlo Vulpio and Maurizio Bossola

HIPERPARATIROIDISMO SEVERO



- **BIOPSIA HUESO EXCLUIR BAJO RECAMBIO OSEO (HUESO ADINAMICO)**
- **FOSFATASA ALCALINA**
- **CABIOS RADIOLOGICOS**

Clin Exp Nephrol (2017) 21 (Suppl 1):S37–S45
DOI 10.1007/s10157-016-1369-2

CrossMark

REVIEW ARTICLE

Management of secondary hyperparathyroidism: how and why?

Hirotaka Komaba[1,2] · Takatoshi Kakuta[1,3] · Masafumi Fukagawa[1]

NIVEL PTH/ALTO RECAMBIO OSEO

- 800-1000 pg/ml
- MAYOR A 1200 pg/ml

EDITORIAL

WILEY Seminars in Dialysis

Parathyroidectomy—A last resort for hyperparathyroidism in dialysis patients

Abstract

There are substantial between-method differences with results

50% PACIENTES EN DIALISIS NO HAY CORRELACION NIVEL PTH/RECAMBIO

KDOKI PTH mayor 300pg/ml
KDIGO PTH mas de 9 veces

PROS/ CONTRAS

TABLE 1 Parathyroidectomy pros and cons

Benefits	Risks
Cure of hyperparathyroidism	Induces hypoparathyroidism
Definitive	Irreversible
Less expensive	Loss of a vital gland
Avoid long-term medications side effects	Necessitates long-term calcium and vitamin D
Improves HBT disease	Development of LBT disease
Considered minimally invasive	Increases short term mortality & morbidity

RENAL FAILURE, 2016
VOL. 38, NO. 7, 1050–1058
http://dx.doi.org/10.1080/0886022X.2016.1184924

Taylor & Francis
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CLINICAL STUDY

Long–term mortality after parathyroidectomy among chronic kidney disease patients with secondary hyperparathyroidism: a systematic review and meta-analysis

Lin Chen[a]*, Kongbo Wang[b]*, Shanlan Yu[c], Liping Lai[d], Xiaoping Zhang[e], Jingjing Yuan[f] and Weifeng Duan[g]

[a]Department of Endocrinology, Yantai Hospital of Traditional Chinese Medicine, Shandong University of Traditional Chinese Medicine

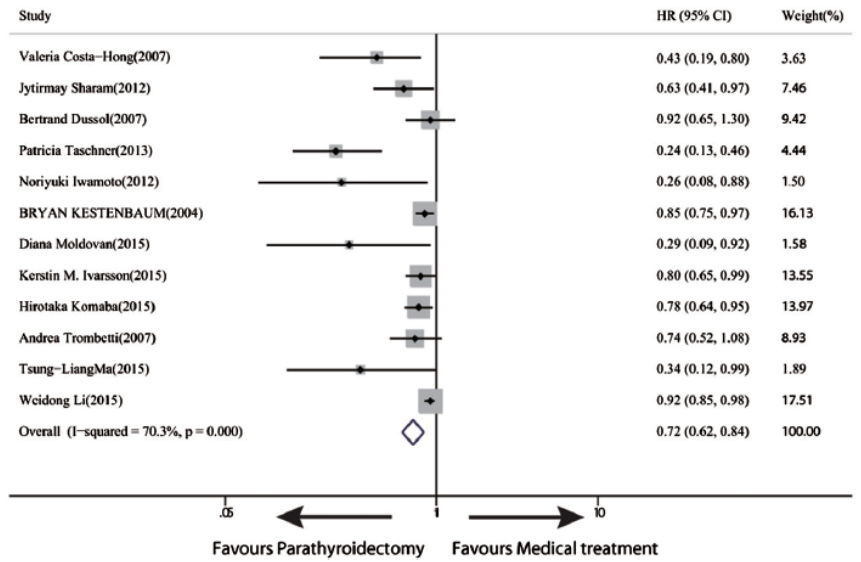

Figure 3. Forest plot for all-cause mortality.

CIRUGÍA

- MEJOR CONTROL MINERALES ÓSEOS.
- CESA ESTRÉS RECAMBIO ÓSEO
- MEJORÍA FUNCIÓN VENTRICULAR/MIOPATÍA
- REDUCE RIESGO FRACTURA
- MEJORÍA ANEMIA/HIPERTENSIÓN
- MEJORÍA CALCIFILAXIS
- DISMINUYE FACTOR CRECIMIENTO FIBROBLASTICO
- MEJORÍA SISTEMA INMUNE

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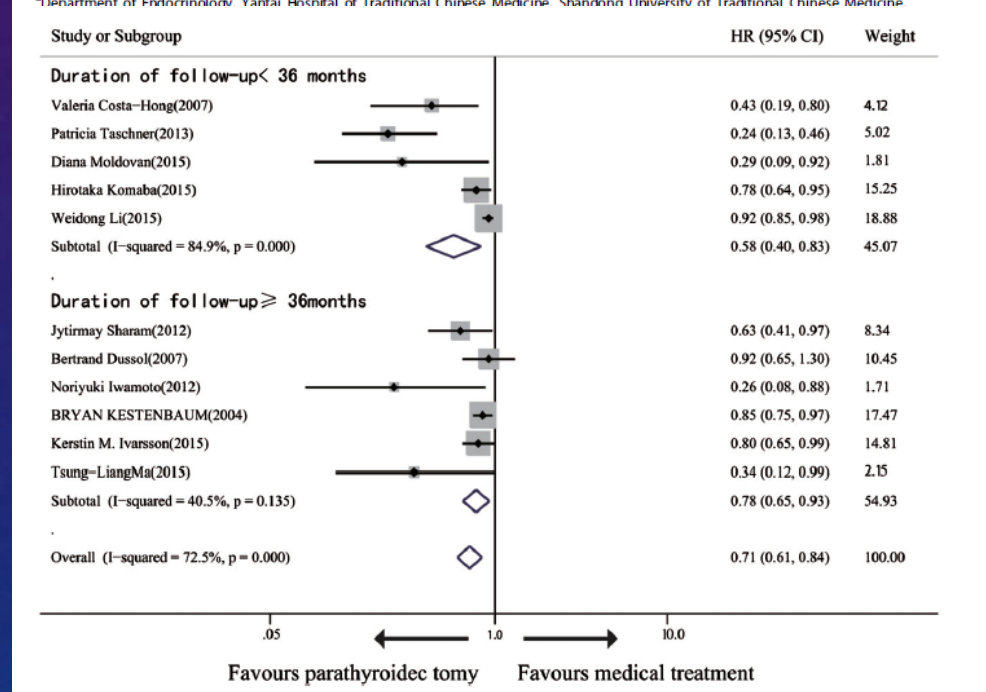

Figure 4. Forest plot for all-cause mortality, according to duration of follow-up.

ESTUDIOS PREOPERATORIOS

ESTUDIOS PREOPERATORIOS

- **PRUEBAS BIOQUÍMICAS**
- **GAMAGRAFÍA MIBI**
- **SPECT CT PARATIROIDES**
- **ECOGRAFIA TIROIDES Y PARATIROIDES**

BIOQUÍMICAS

- NIVEL DE PTH
- NIVEL DE CALCIO
- NIVEL DE FÓSFORO
- FOSFATASA ALCALINA

Risk Factors for Elevated Preoperative Alkaline Phosphatase in Patients with Refractory Secondary Hyperparathyroidism

MENG YANG, M.D.,* LING ZHANG, M.D.,† LINPING HUANG, M.D.,* XIAOLIANG SUN, M.D.,* HAOYANG JI, M.D.,* YAO LU, M.D.*

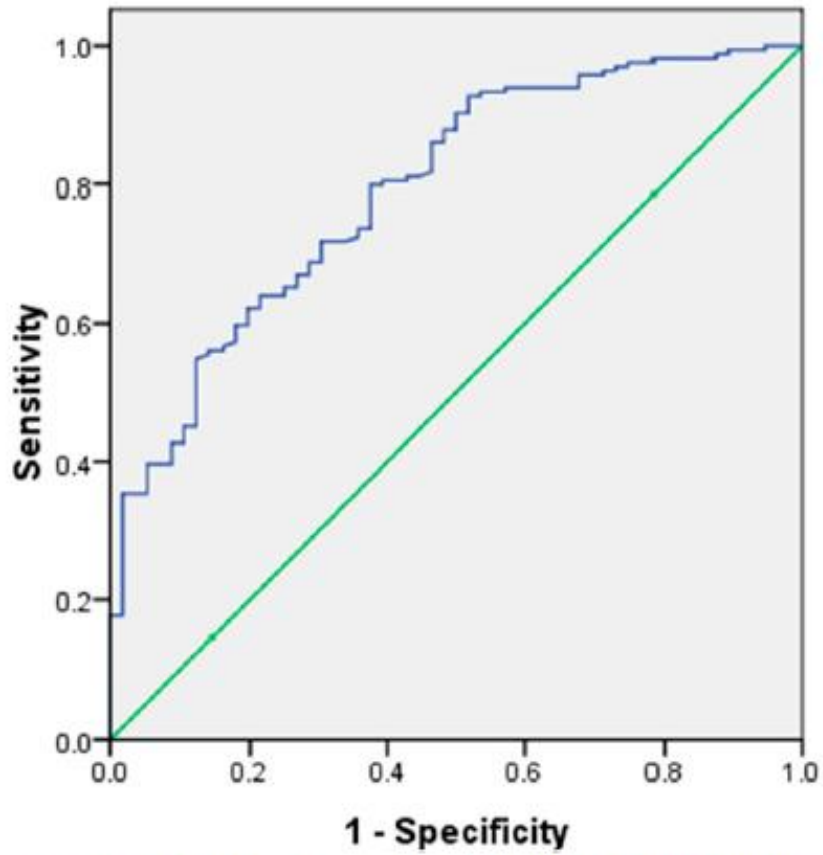

FIG. 1. The ROC curve for the PTH in predicting the occurrence of preoperative eleveated ALP in patients with rSHPT.

BIOQUÍMICAS

Risk Factors for Elevated Preoperative Alkaline Phosphatase in Patients with Refractory Secondary Hyperparathyroidism

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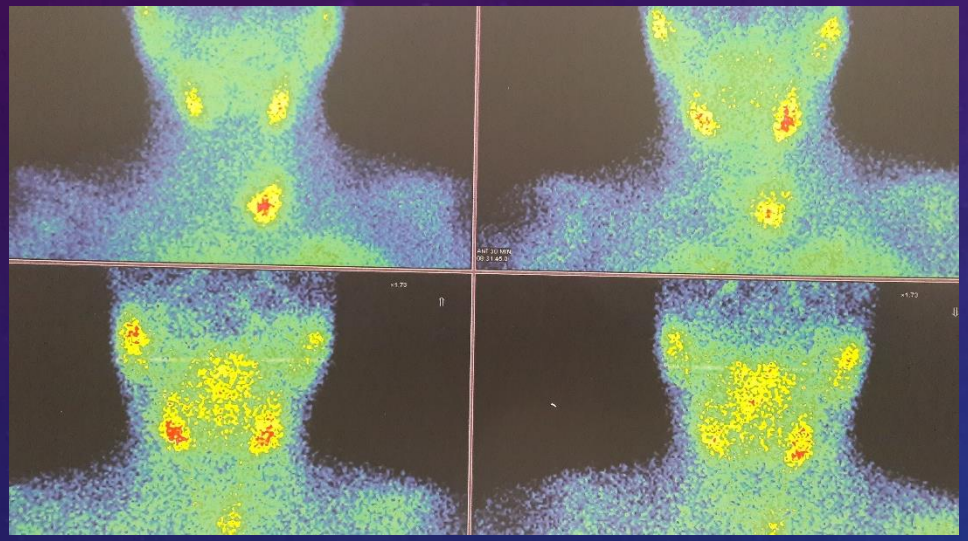
- NIVEL DE PTH
- NIVEL DE CALCIO
- NIVEL DE FÓSFORO
- FOSFATASA ALCALINA

- MAYOR SEVERIDAD
- MAS JOVENES
- MAYOR HIPOCALCEMIA POP
- CIRUGÍA MAS TEMPRANA

GAMAGRAFÍA SESTAMIBI

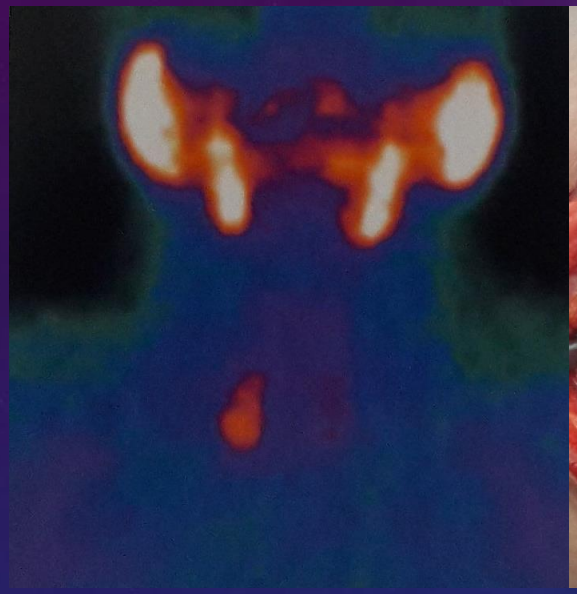


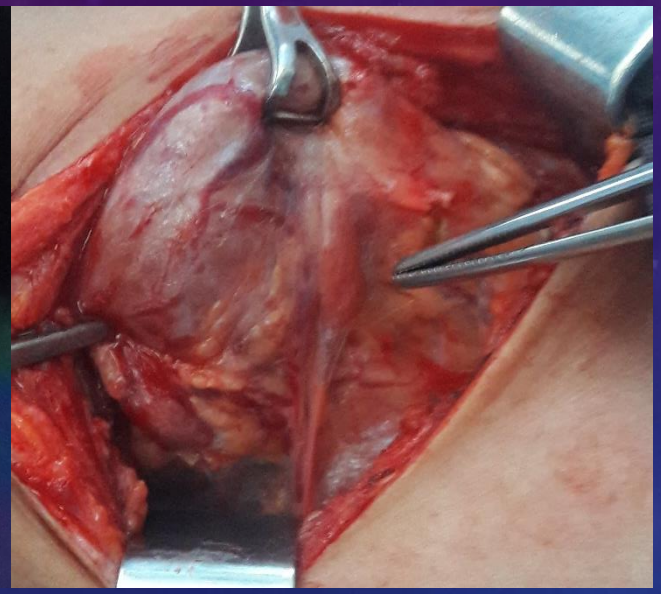
Negative Sestamibi Scans Predict Lower Likelihood of Surgical Referral in Patients with Primary Hyperparathyroidism

JACOB Q. LLOYD, M.D., JENNY M. HOLCOMBE, PH.D., ALLYSSA A. RACKLEY, B.S., RICHARD M. TANNER, M.D., W. HEATH GILES, M.D.

From the Department of Surgery, University of Tennessee College of Medicine at Chattanooga, Chattanooga, Tennessee

GAMAGRAFÍA SESTAMIBI





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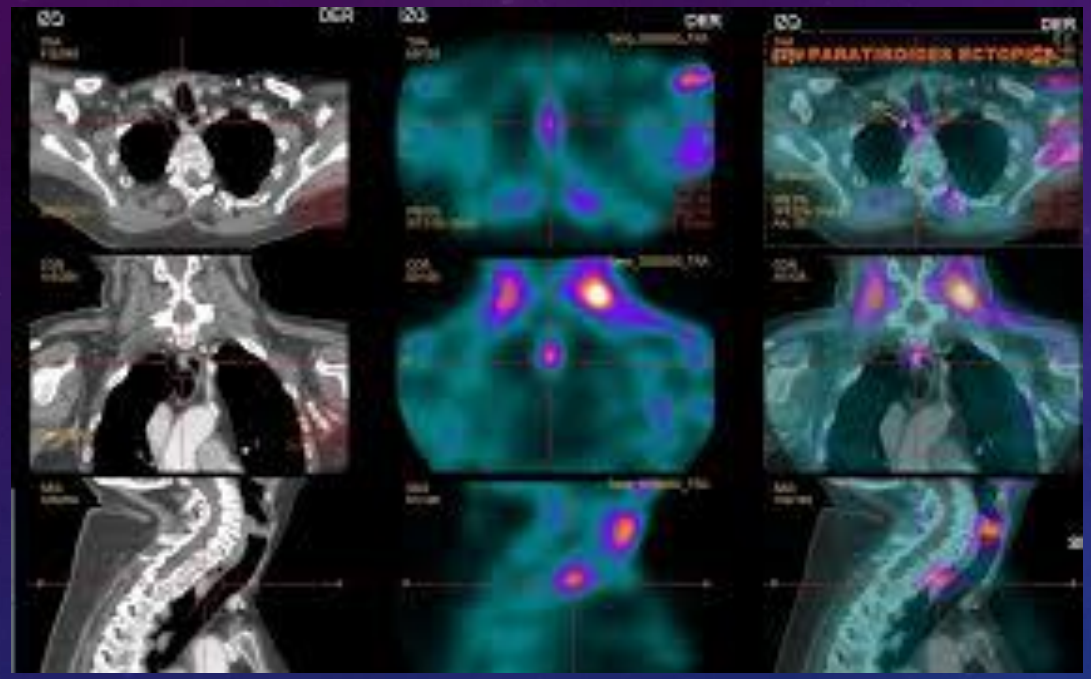
NO ES REQUISITO Y EN GENERAL DE POCA UTILIDAD EN LA TÉCNICA QUIRÚRGICA

SPECT CT PARATIROIDES



Li et al. BMC Medical Imaging (2017) 17:60
DOI 10.1186/s12880-017-0235-3

BMC Medical Imaging

RESEARCH ARTICLE Open Access

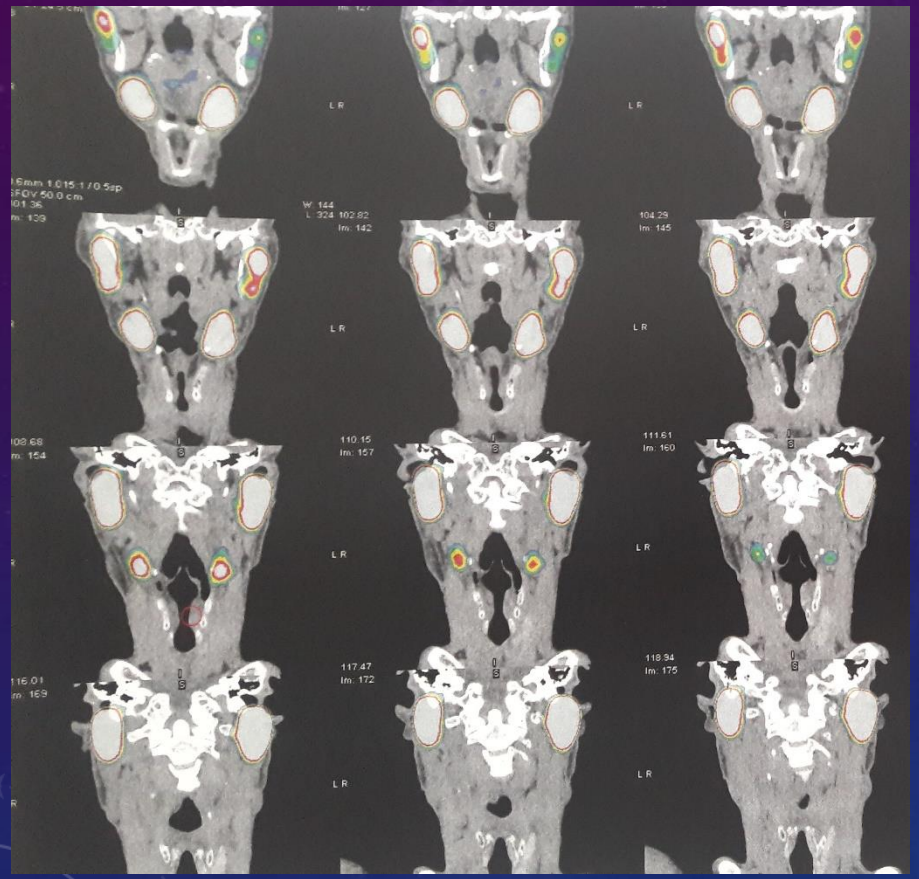
Lesion based diagnostic performance of dual phase ^{99m}Tc-MIBI SPECT/CT imaging and ultrasonography in patients with secondary hyperparathyroidism

Panli Li[1,2], Qiufang Liu[1,2], Daoqiang Tang[3], Yinyan Zhu[1], Lian Xu[1], Xiaoguang Sun[1] and Shaoli Song[1*]

Table 3 ^{99m}Tc-MIBI SPECT/CT imaging in SHPT patients grouped according to the lesion diameter optimal cutoff value calculated by ROC analysis

	Diameter		χ^2	*P* value
Groups	>8.05	≤8.05	40.60	<0.0001
MIBI (+)	83	9		
MIBI (−)	8	18		

SPECT CT PARATIROIDES



^{99m}Tc-MIBI SPECT/CT imaging contribution in the diagnosis of patients with hyperparathyroidism

Manevska Nevena, Stojanoski Sinisa, Stoilovska Bojana, Sazdova Irena

Table 2: Detection rate and sensitivity of the diagnostic modalities.

Method	Detection rate (%)	Sensitivity (%)
US	61.5	77.4
Planar scintigraphy	63.4	83.8
SPECT/CT	75.6	100

ECOGRAFÍA

- TIROIDES

  ENFERMEDAD NODULAR TIROIDES
- PARATIROIDES

  IDENTIDIFICACIÓN

  SCORE

Langenbecks Arch Surg (2017) 402:295–301
DOI 10.1007/s00423-016-1546-5

ORIGINAL ARTICLE

Ultrasound-based scores as predictors for nodular hyperplasia in patients with secondary hyperparathyroidism: a prospective validation study

Jill Gwiasda[1] · Alexander Kaltenborn[1,2] · Jörg A. Müller[3] · Michaela Serttas[4] · Georg W. F. Scheumann[4] · Harald Schrem[1,4] · Mark D. Jäger[4]

		Nodular (*n*)	Non-nodular (*n*)
Doppler score Onoda	P0, C0	7	8
	P1/2, C0	2	12
	P0/1/2, C1	11	6
	P0/1/2, C2	4	1
Doppler score Vulpio	P1/2, C1	3	12
	(P1/2+C1), C2	10	6
	P1/2+C2	4	1
Echostructural pattern Vulpio	Hypoechoic homogeneous	7	6
	Slightly heterogeneous	15	20
	Highly heterogeneous	8	10
	Nodular	4	0

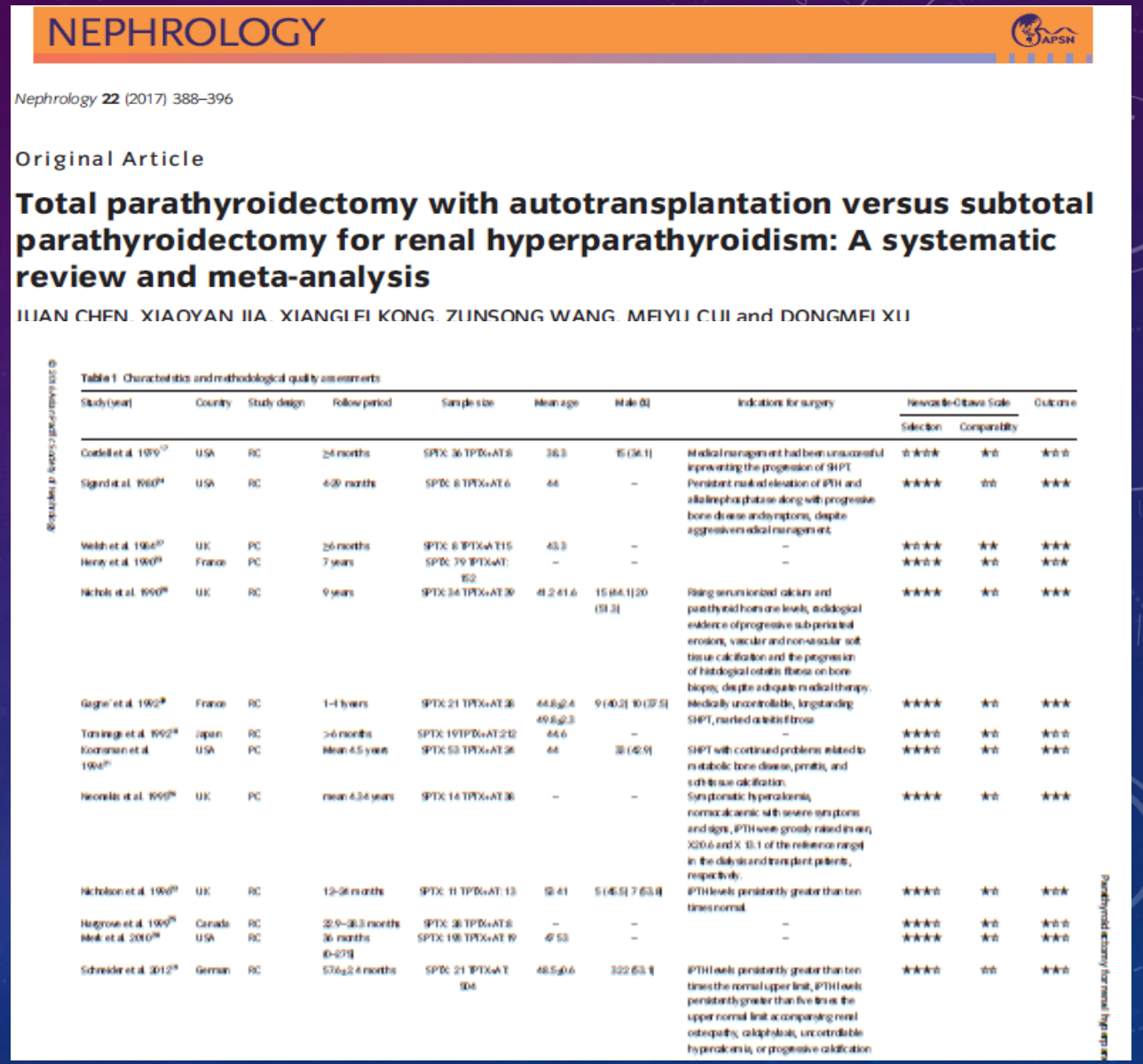
P peripher signal, *C* central signal

TÉCNICA QUIRÚRGICA

TÉCNICA QUIRÚRGICA

TOTAL Y AUTOTRANSPLANTE VERSUS SUBTOTAL

	TOTAL-AT	SUBTOTAL
Mejoría síntomas.	82.9%	89.5%
Mejoría ósea (imagen)	79.3%	100%
Recurrencia/persistencia	8.3%	8.4%
Reoperación	8.1%	6.6%
Nivel Calcio recuperación	3%	3.5%
Complicación pop	1,5%	3.0%



NEPHROLOGY

Nephrology **22** (2017) 388–396

Original Article

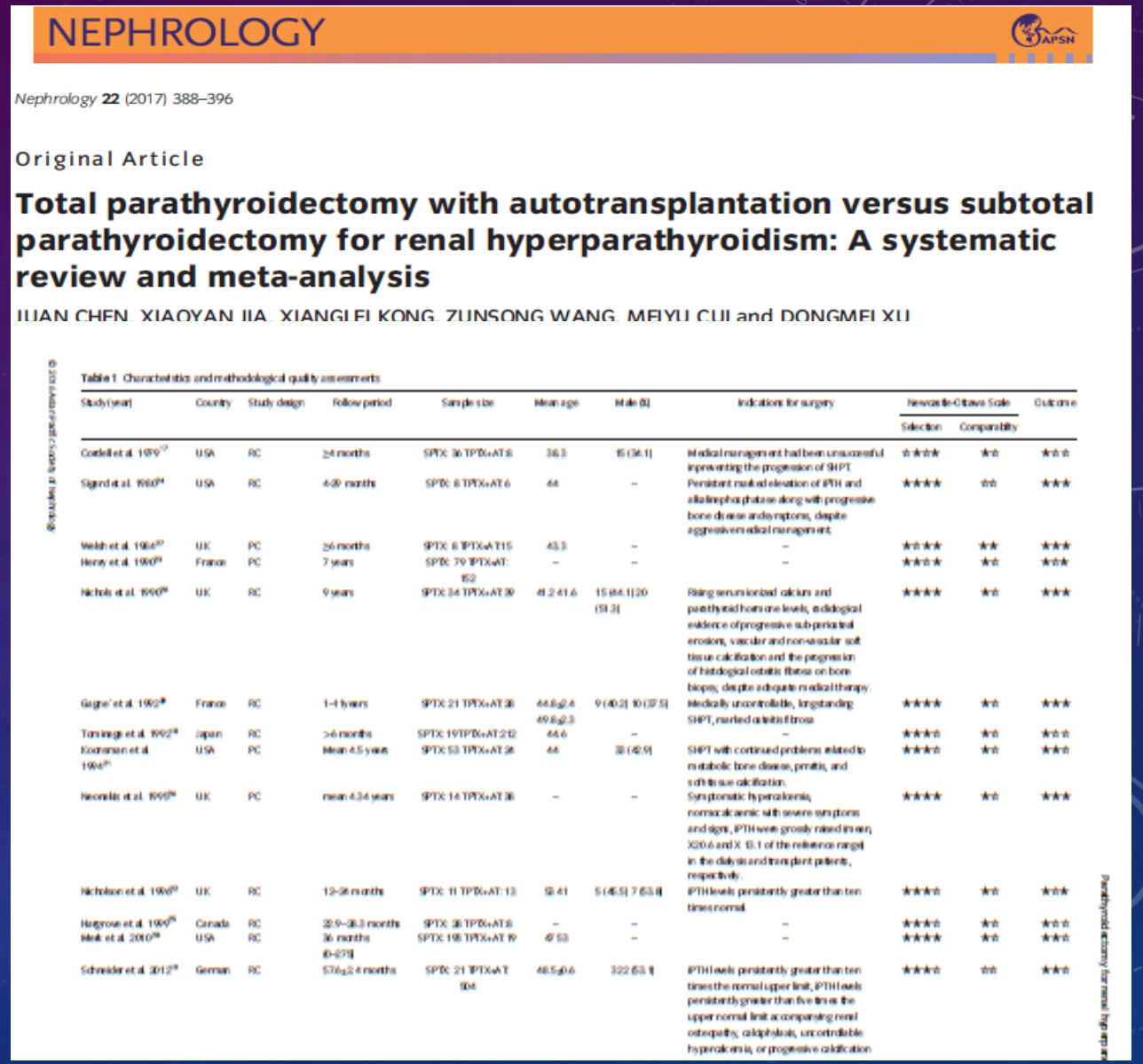
Total parathyroidectomy with autotransplantation versus subtotal parathyroidectomy for renal hyperparathyroidism: A systematic review and meta-analysis

JUAN CHEN, XIAOYAN JIA, XIANGLEI KONG, ZUNSONG WANG, MEIYU CUI and DONGMEI XU

Table 1 Characteristics and methodological quality assessments

Study (year)	Country	Study design	Follow period	Sample size	Mean age	Male (%)	Indications for surgery	Newcastle-Ottawa Scale: Selection	Newcastle-Ottawa Scale: Comparability	Outcome
Cordell et al. 1979[17]	USA	RC	≥4 months	SPTX: 36 TPTX+AT:8	38.3	15 (36.1)	Medical management had been unsuccessful in preventing the progression of SHPT.	★★★★	★★	★★★
Sigard et al. 1980[18]	USA	RC	4-39 months	SPTX: 8 TPTX+AT:6	44	–	Persistent marked elevation of iPTH and alkaline phosphatase along with progressive bone disease and symptoms, despite aggressive medical management.	★★★★	★★	★★★
Welsh et al. 1984[19]	UK	PC	≥6 months	SPTX: 8 TPTX+AT:15	43.3	–	–	★★★★	★★	★★★
Henry et al. 1990[20]	France	PC	7 years	SPTX: 79 TPTX+AT: 152	–	–	–	★★★★	★★	★★★
Nichols et al. 1990[21]	UK	RC	9 years	SPTX: 34 TPTX+AT:39	41.2 41.6	15 (44.1) 20 (51.3)	Rising serum ionized calcium and parathyroid hormone levels; radiological evidence of progressive subperiosteal erosion, vascular and non-vascular soft tissue calcification and the progression of histological osteitis fibrosa on bone biopsy, despite adequate medical therapy.	★★★★	★★	★★★
Gagne' et al. 1992[22]	France	RC	1–4 years	SPTX: 21 TPTX+AT:28	44.8±2.4 49.8±2.3	9 (40.2) 10 (37.5)	Medically uncontrollable, long-standing SHPT, marked osteitis fibrosa	★★★★	★★	★★★
Tominaga et al. 1992[23]	Japan	RC	>6 months	SPTX: 19 TPTX+AT:212	44.6	–	–	★★★★	★★	★★★
Kooiman et al. 1994[24]	USA	PC	Mean 4.5 years	SPTX: 53 TPTX+AT:26	44	31 (42.5)	SHPT with continued problems related to metabolic bone disease, pruritis, and soft tissue calcification.	★★★★	★★	★★★
Neonato et al. 1995[25]	UK	PC	mean 4.3.4 years	SPTX: 14 TPTX+AT:36	–	–	Symptomatic hypercalcemia, normocalcaemic with severe symptoms and signs, iPTH were grossly raised in over X20.6 and X 13.1 of the reference range in the dialysis and transplant patients, respectively.	★★★★	★★	★★★
Nicholson et al. 1996[26]	UK	RC	12–24 months	SPTX: 11 TPTX+AT: 13	52 41	5 (45.5) 7 (53.8)	iPTH levels persistently greater than ten times normal	★★★★	★★	★★★
Hasgrove et al. 1996[27]	Canada	RC	22.9–28.3 months	SPTX: 28 TPTX+AT:8	–	–	–	★★★★	★★	★★★
Mek et al. 2000[28]	USA	RC	36 months (0–279)	SPTX: 198 TPTX+AT: 19	47 53	–	–	★★★★	★★	★★★
Schneider et al. 2012[29]	German	RC	57.6±2.4 months	SPTX: 21 TPTX+AT: 104	48.5±0.6	322 (53.1)	iPTH levels persistently greater than ten times the normal upper limit, iPTH levels persistently greater than five times the upper normal limit accompanying renal osteopathy, calciphylaxis, uncontrollable hypercalcemia, or progressive calcification	★★★★	★★	★★★

- EFECTOS EN EL CALCIO Y PTH SIMILARES
- SIMILAR CONTROL DEL HIPERPARATIROIDISMO
- SIN DIFERENCIAS ESTADISTICAMENTE SIGNIFICATIVAS



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Nicholas et al. 1995[25]	UK	PC	mean 4.3.4 years	SPTX: 14 TPTX+AT:38	–	–	Symptomatic hypercalcemia, normocalcaemic with severe symptoms and signs, iPTH were grossly raised in over, X20.6 and X 13.1 of the reference range in the dialysis and transplant patients, respectively.	★★★★	★★	★★★
Nicholson et al. 1996[26]	UK	RC	12–24 months	SPTX: 11 TPTX+AT: 13	52 41	5 (45.5) 7 (53.8)	iPTH levels persistently greater than ten times normal	★★★★	★★	★★★
Hasgrove et al. 1996[27]	Canada	RC	22.9–28.3 months	SPTX: 28 TPTX+AT:8	–	–	–	★★★★	★★	★★★
Mak et al. 2000[28]	USA	RC	36 months (0–279)	SPTX: 198 TPTX+AT: 19	47 53	–	–	★★★★	★★	★★★
Schneider et al. 2012[29]	German	RC	57.6±2.4 months	SPTX: 21 TPTX+AT: 104	48.5±0.6	322 (53.1)	iPTH levels persistently greater than ten times the normal upper limit, iPTH levels persistently greater than five times the upper normal limit accompanying renal osteopathy, calciphylaxis, uncontrollable hypercalcemia, or progressive calcification	★★★★	★★	★★★

- COMPLICACIONES SIMILARES
- MEJORIA SINTOMATICA SIMILAR
- MEJORIA HIPERPARATIRODISMO SIMILAR
- PARATIROIDECTOMIA TOTAL MEJOR QUE LA TOTAL Y AT EN RECURRENCIA/PERSISTENCIA
- HIPOPARATIROIDISMO MAYOR EN LA TOTAL SIN AT

RENAL FAILURE, 2017
VOL. 39, NO. 1, 678–687
https://doi.org/10.1080/0886022X.2017.1363779

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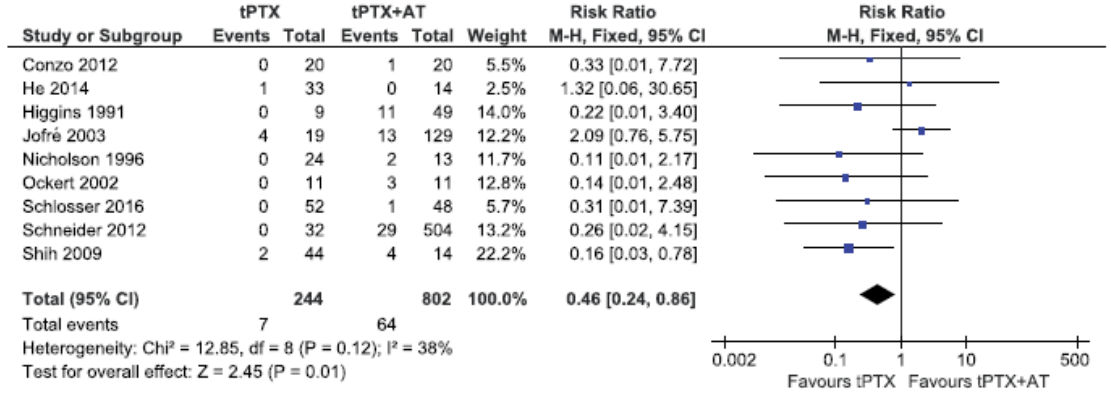
CLINICAL STUDY

OPEN ACCESS Check for updates

Total parathyroidectomy versus total parathyroidectomy with autotransplantation for secondary hyperparathyroidism: systematic review and meta-analysis

Changjia Li[a], Liang Lv[a], Hongqiao Wang[b], Xufu Wang[c], Bangxu Yu[d], Yan Xu[e], Xiaobin Zhou[f] and Yanbing Zhou[a]

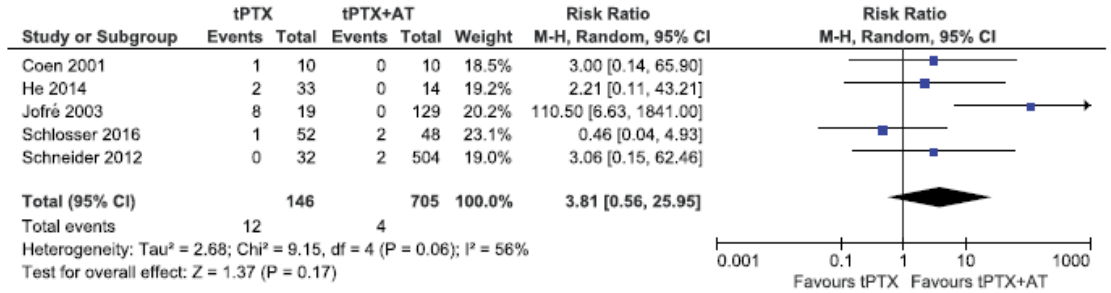
[a]Department of General Surgery, Affiliated Hospital of Qingdao University, Qingdao, China; [b]Department of Ultrasound, Affiliated



Study or Subgroup	tPTX Events	tPTX Total	tPTX+AT Events	tPTX+AT Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Conzo 2012	0	20	1	20	5.5%	0.33 [0.01, 7.72]
He 2014	1	33	0	14	2.5%	1.32 [0.06, 30.65]
Higgins 1991	0	9	11	49	14.0%	0.22 [0.01, 3.40]
Jofré 2003	4	19	13	129	12.2%	2.09 [0.76, 5.75]
Nicholson 1996	0	24	2	13	11.7%	0.11 [0.01, 2.17]
Ockert 2002	0	11	3	11	12.8%	0.14 [0.01, 2.48]
Schlosser 2016	0	52	1	48	5.7%	0.31 [0.01, 7.39]
Schneider 2012	0	32	29	504	13.2%	0.26 [0.02, 4.15]
Shih 2009	2	44	4	14	22.2%	0.16 [0.03, 0.78]
Total (95% CI)		**244**		**802**	**100.0%**	**0.46 [0.24, 0.86]**
Total events	7		64			

Heterogeneity: Chi² = 12.85, df = 8 (P = 0.12); I² = 38%
Test for overall effect: Z = 2.45 (P = 0.01)

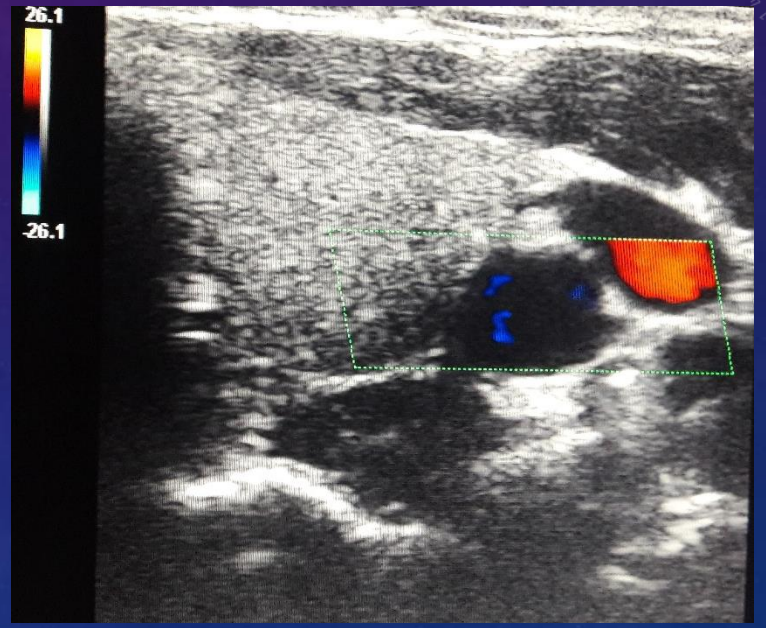
Figure 4. Forest plot for reoperation because of persistence or recurrence of sHPT.

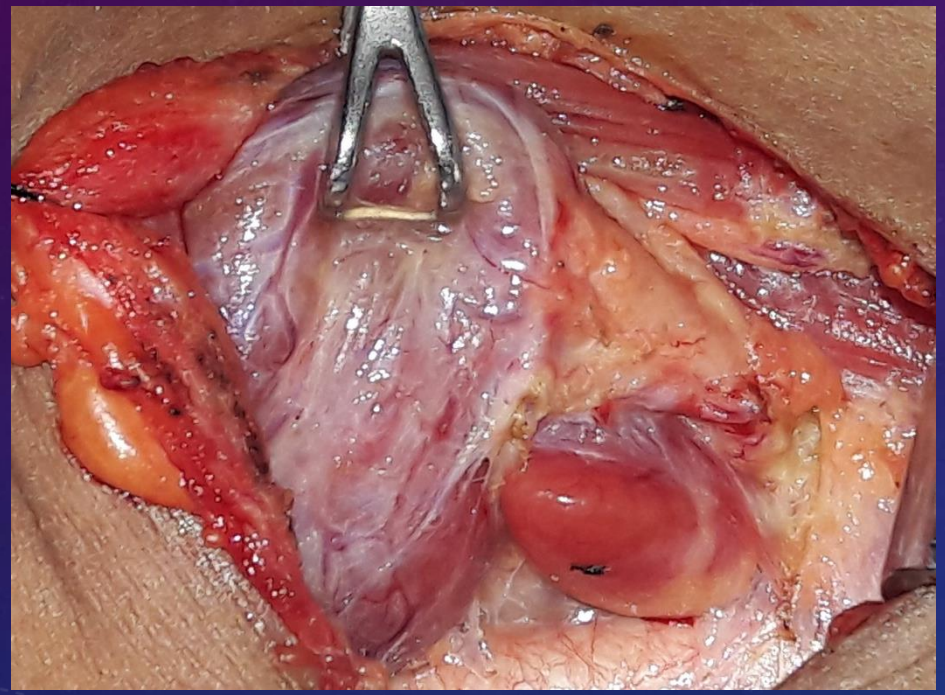


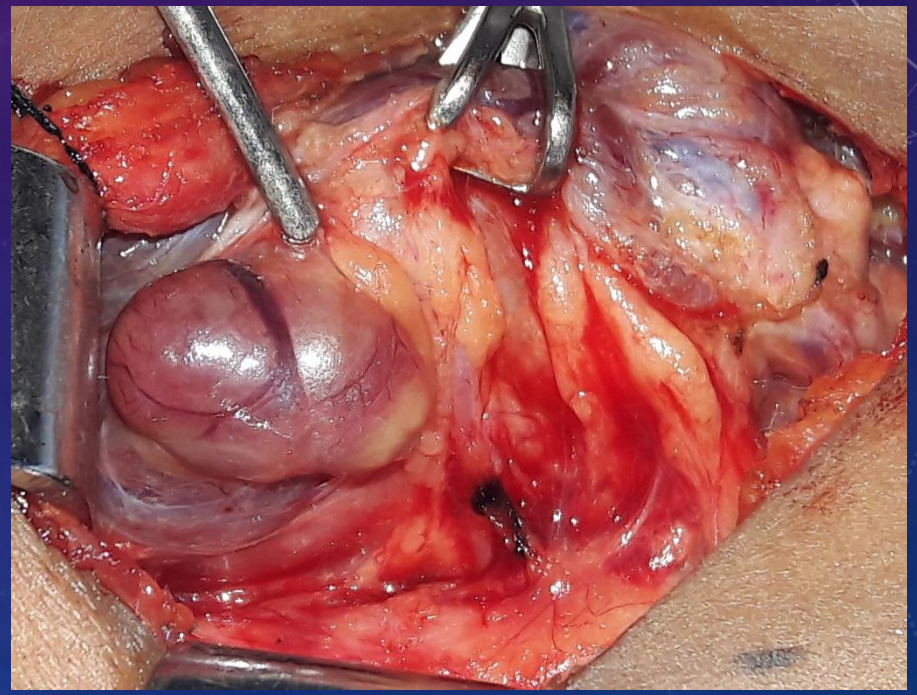
Study or Subgroup	tPTX Events	tPTX Total	tPTX+AT Events	tPTX+AT Total	Weight	Risk Ratio M-H, Random, 95% CI
Coen 2001	1	10	0	10	18.5%	3.00 [0.14, 65.90]
He 2014	2	33	0	14	19.2%	2.21 [0.11, 43.21]
Jofré 2003	8	19	0	129	20.2%	110.50 [6.63, 1841.00]
Schlosser 2016	1	52	2	48	23.1%	0.46 [0.04, 4.93]
Schneider 2012	0	32	2	504	19.0%	3.06 [0.15, 62.46]
Total (95% CI)		**146**		**705**	**100.0%**	**3.81 [0.56, 25.95]**
Total events	12		4			

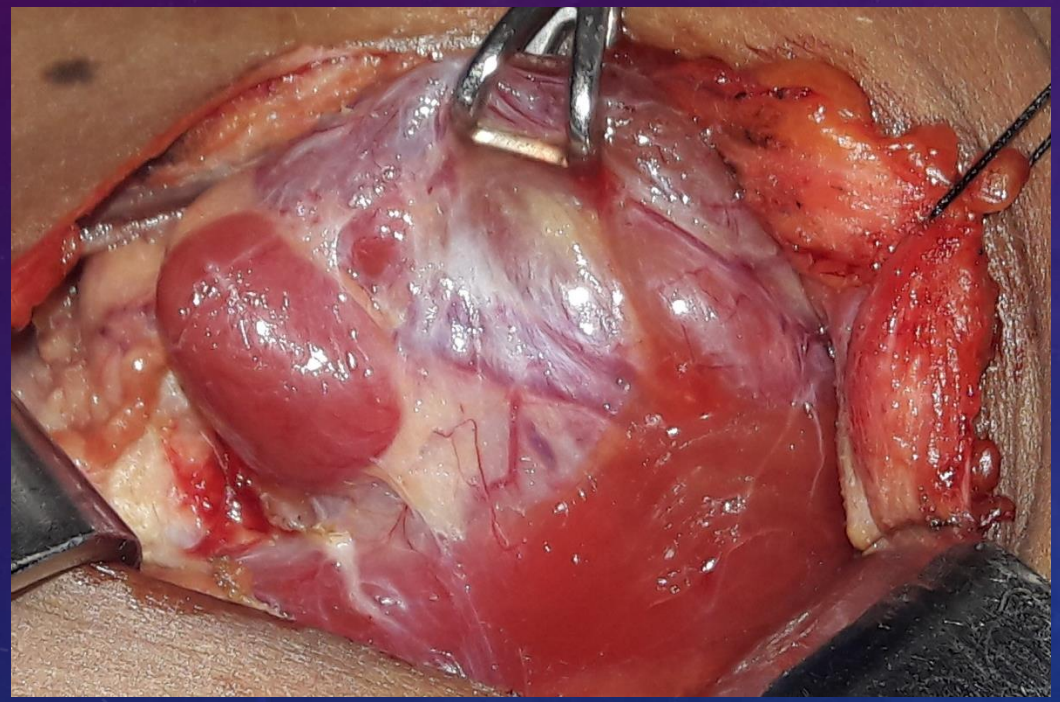
Heterogeneity: Tau² = 2.68; Chi² = 9.15, df = 4 (P = 0.06); I² = 56%
Test for overall effect: Z = 1.37 (P = 0.17)

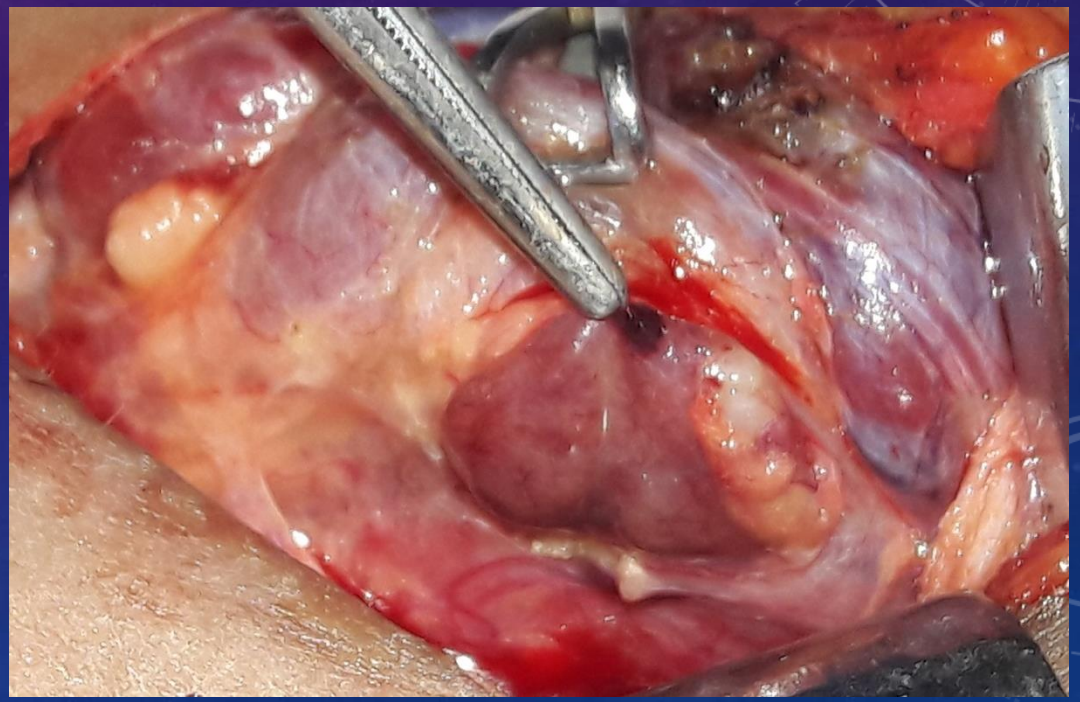
Figure 5. Forest plot for persistence of sHPT.

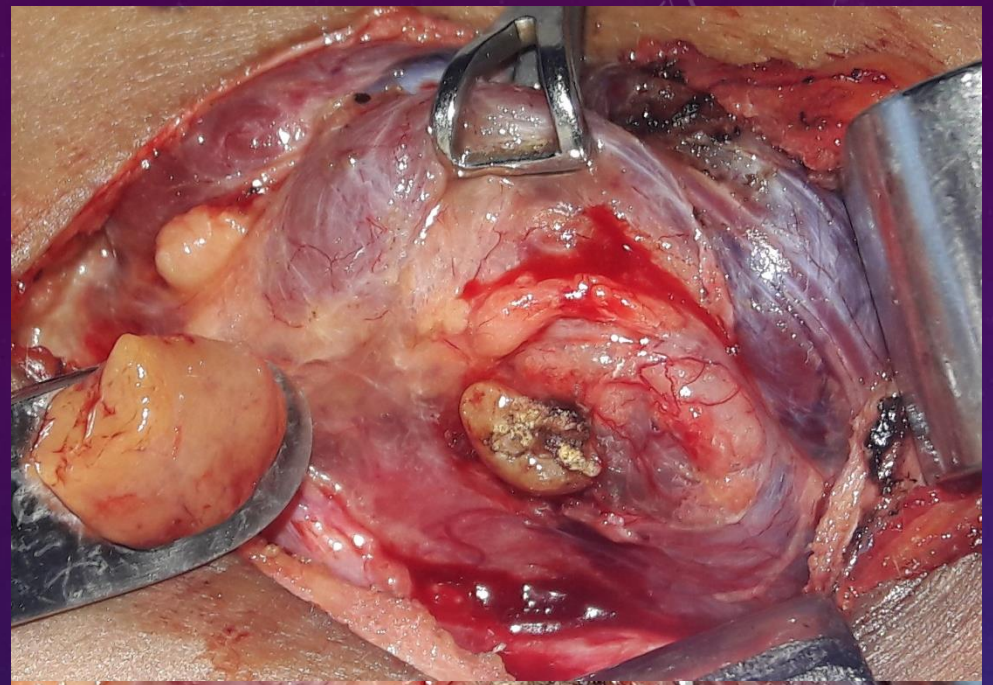

26.1
-26.1

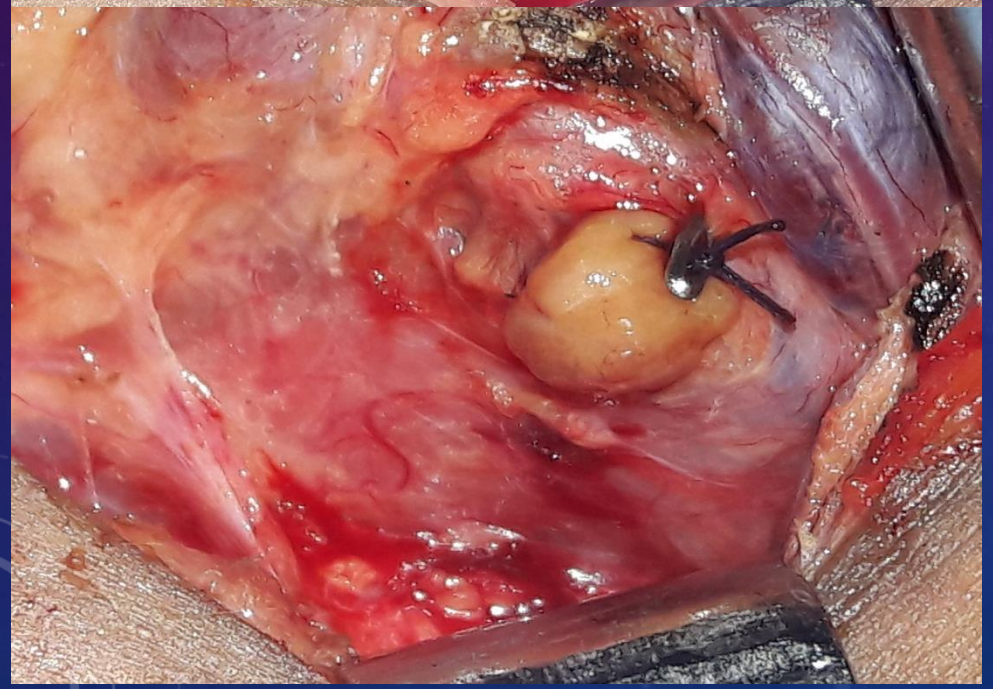




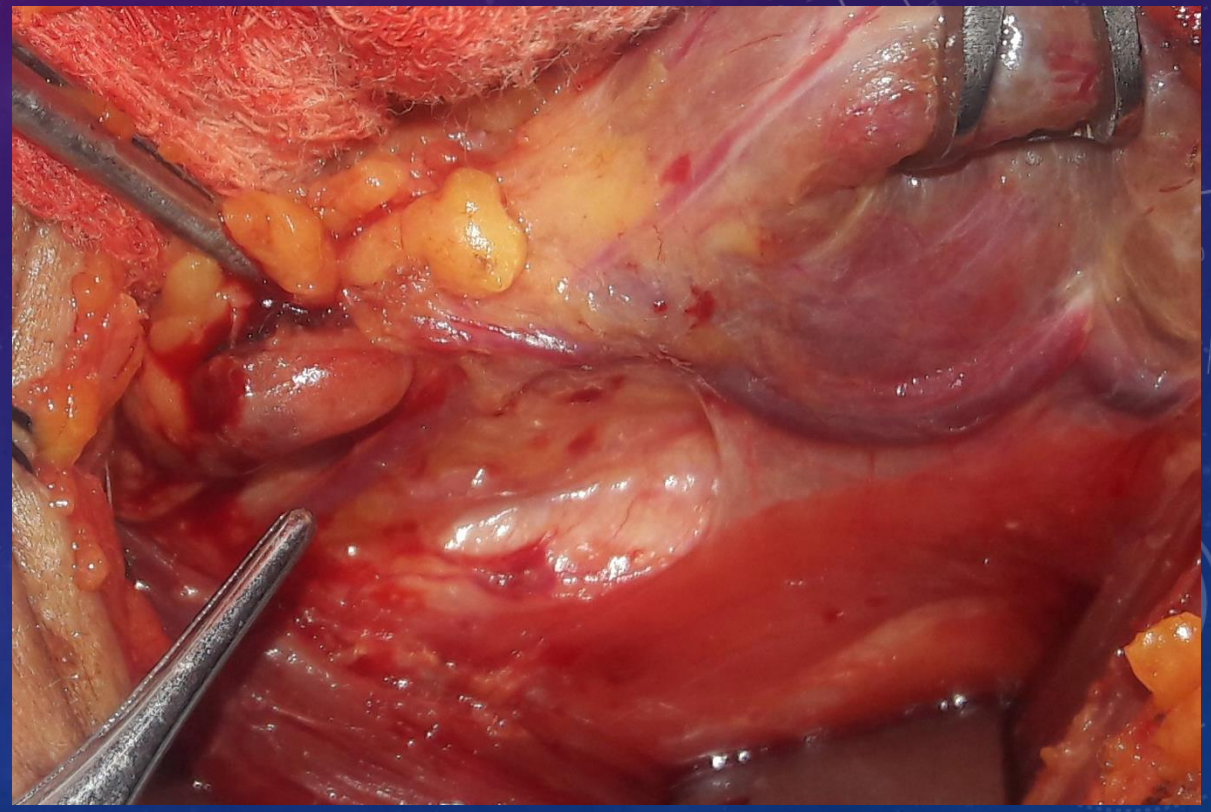








NO SIEMPRE SON ES TAN EVIDENTE



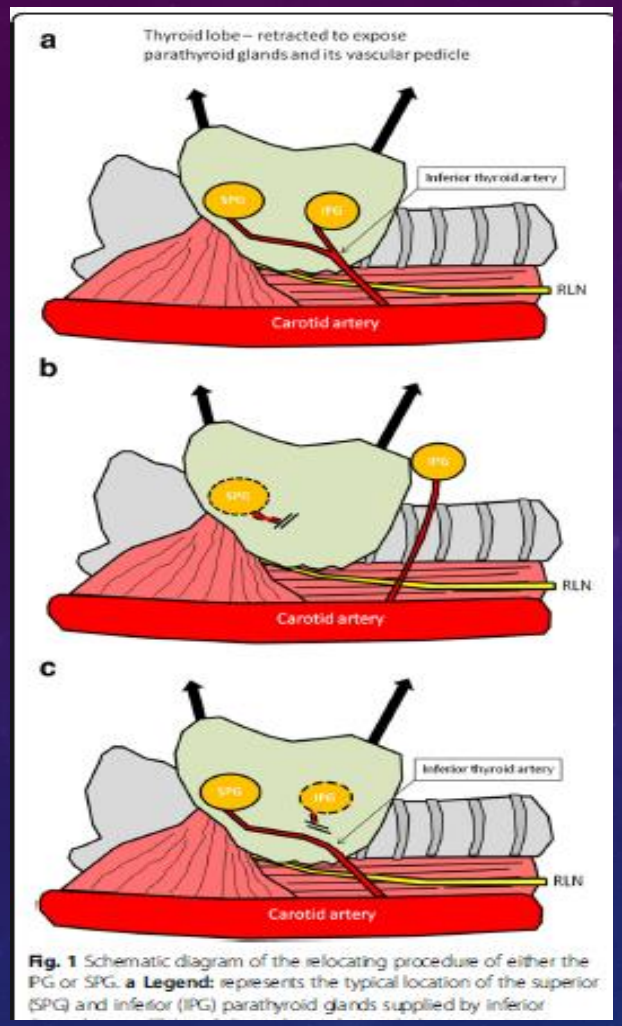


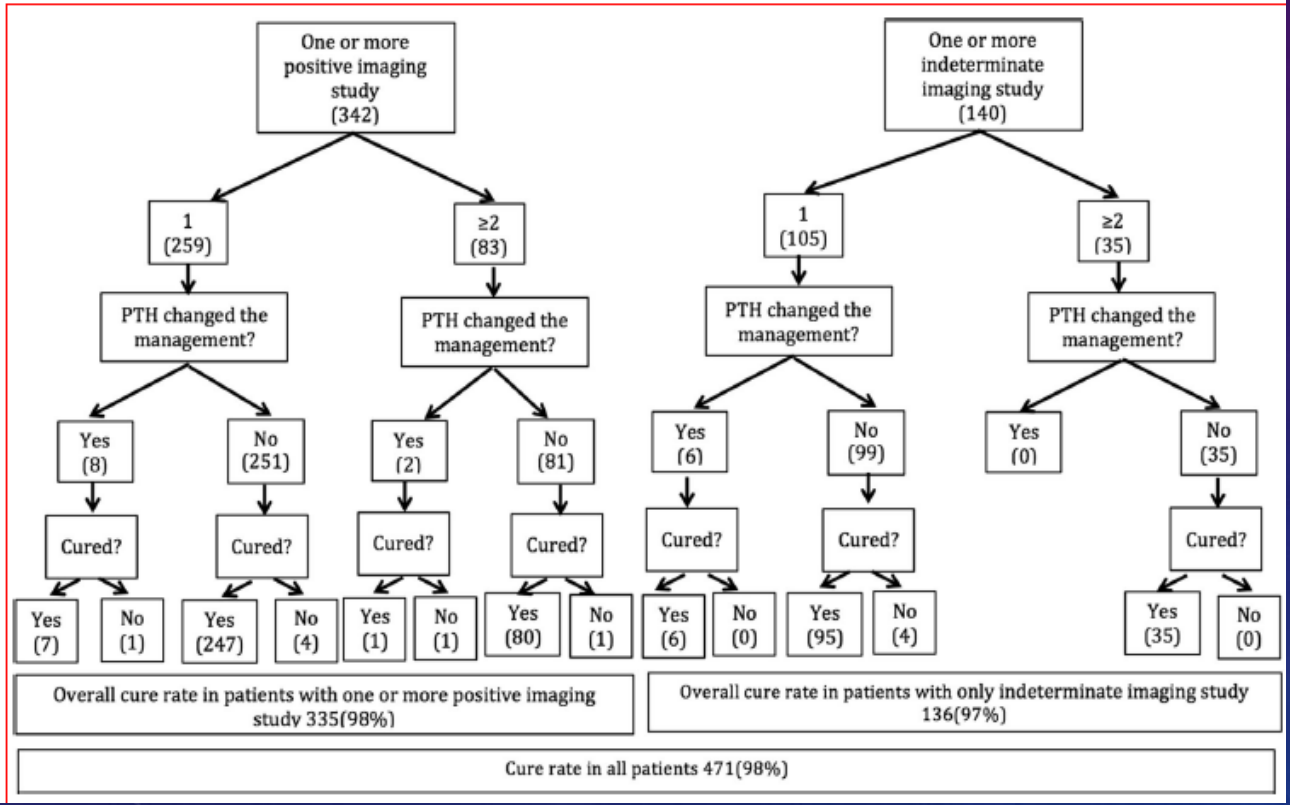
Fig. 1 Schematic diagram of the relocating procedure of either the IPG or SPG. **a Legend:** represents the typical location of the superior (SPG) and inferior (IPG) parathyroid glands supplied by inferior

ORIGINAL RESEARCH ARTICLE **Open Access**

Subtotal Parathyroidectomy and Relocation of the Parathyroid Remnant for Renal Hyperparathyroidism: modification of a traditional operation

Tsu-Hui (Hubert) Low[1] and John Yoo[2*]

PTH INTRAOPERATORIA



World J Surg (2017) 41:1500–1505
DOI 10.1007/s00268-017-3871-4

World Journal of Surgery

CrossMark

ORIGINAL SCIENTIFIC REPORT

Intraoperative PTH May Not Be Necessary in the Management of Primary Hyperparathyroidism Even with Only One Positive or Only Indeterminate Preoperative Localization Studies

Alireza Najafian[1] · Stacie Kahan[1] · Matthew T. Olson[2] · Ralph P. Tufano[3] · Martha A. Zeiger[1]

Table 1 Comparison of cure rates with or without IOPTH in patients with different preoperative imaging status

	Cure rate		*p*
	With IOPTH (%)	Without IOPTH (%)	
Positive ($n = 342$)			
1 ($n = 259$)	98	96	0.12
≥2 ($n = 83$)	97	96	0.95
Total ($n = 342$)	98	96	0.18
Indeterminate ($n = 140$)			
1 ($n = 105$)	96	90	0.10
≥2 ($n = 35$)	100	100	N/A
Total ($n = 140$)	97	93	0.16

FACTORES QUE DIFICULTAN LA CIRUGÍA

FACTORES QUE DIFICULTAN LA CIRUGÍA

ADECUACIÓN PREOPERATORIA/ POSTOPERATORIA

- **DIÁLISIS SINCRONIZADA**
- **NIVELES DE FOSFORO/POTASIO**
- **HIPERTENSIÓN NO CONTROLADA**
- **DIABETES NO CONTROLADA**
- **ANTICOAGULACIÓN**

- **SÍNDROME HUESO HAMBRIENTO**

DIFICULTADES DE LA CIRUGÍA

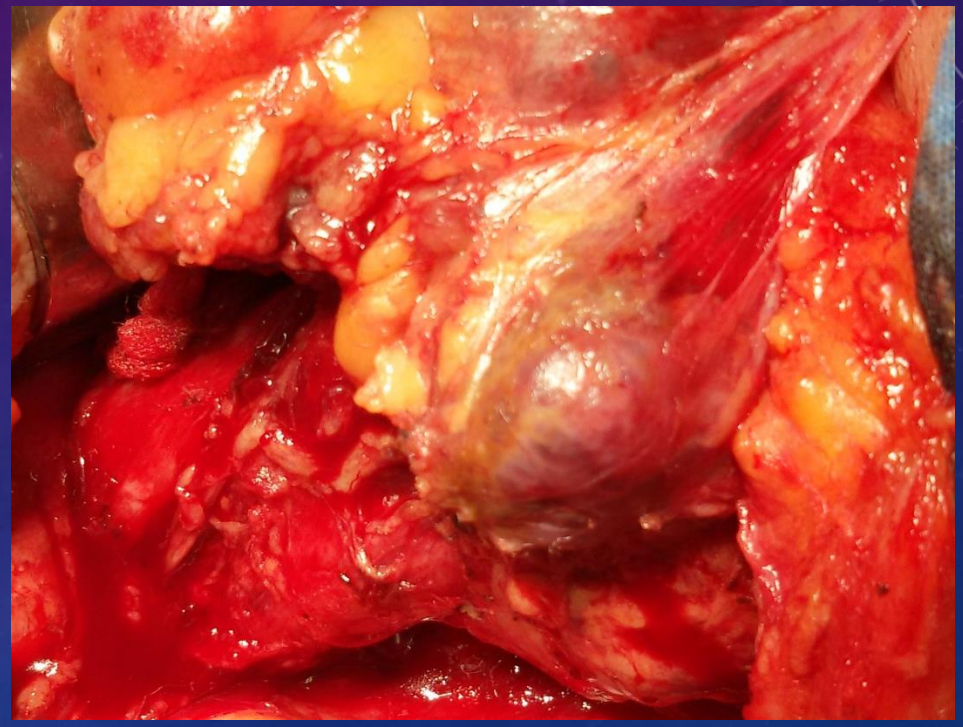
Rev Colomb Cir. 2011;26(Sup.):49-70

CASOS CLÍNICOS

CABEZA Y CUELLO
02-003
La "fenolización"previa de paratiroides en el hiperparatiroidismo secundario y terciario: una cirugía más compleja

Andrés Ignacio Chala, César Restrepo
Facultad de Ciencias para la Salud, Universidad de Caldas
Manizales, Colombia
andreschalag@hotmail.com

la cirugía fue más compleja en términos de disección y tiempo quirúrgico, dos requirieron lobectomía tiroidea asociada y otros dos requirieron tiroidectomía en un segundo tiempo y vaciamiento por carcinoma de tiroides no diagnosticado previamente. La histopatología final reportó adenomas en 63 % e hiperplasia en 37 %. Se revisa la presentación, la cirugía, la morbilidad y los resultados finales.



DIFICULTADES DE LA CIRUGÍA

INTERNATIONAL JOURNAL OF HYPERTHERMIA, 2017
VOL. 33, NO. 8, 946–952
https://doi.org/10.1080/02656736.2017.1357210

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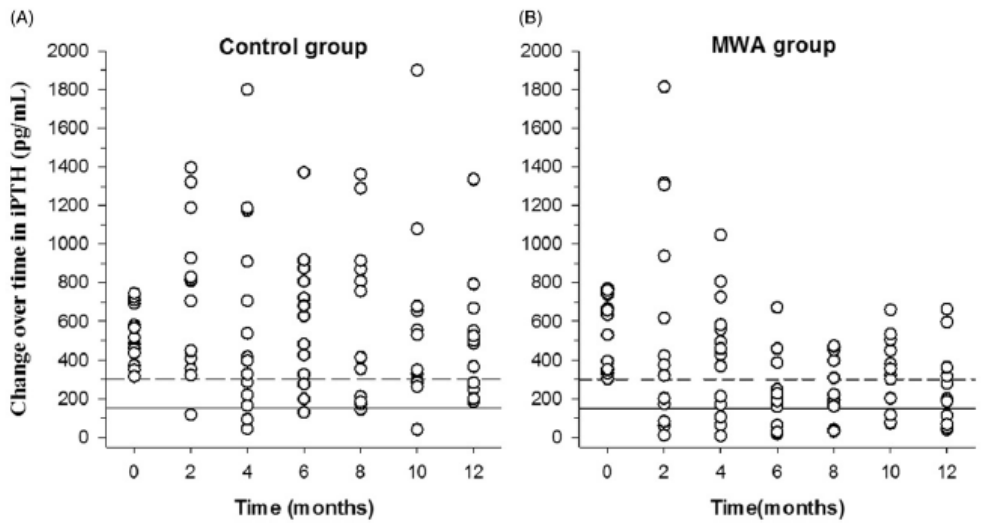
Microwave ablation: an effective treatment for mild-to-moderate secondary hyperparathyroidism in patients undergoing haemodialysis

Gang Wang[a], Sha Liu[a], Xu Liu[a], Linxue Qian[b], Zongli Diao[a] and Wenhu Liu[a]



e 3. Changes in serum levels of intact parathyroid hormone (iPTH). The levels of iPTH in the microwave ablation (MWA) group (B) were lower than those in alcitriol alone group (A). Upper limit of the target range in iPTH (300 pg/mL). Lower limit of the target range in iPTH (150 pg/mL).

0.85). However, the percentage of patients who reached ... group after MWA were lower, and the difference reached sig...

RENAL FAILURE, 2017
VOL. 39, NO. 1, 140–145
http://dx.doi.org/10.1080/0886022X.2016.1256307

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CLINICAL STUDY

OPEN ACCESS

Efficacy of microwave ablation for severe secondary hyperparathyroidism in subjects undergoing hemodialysis

Zongli Diao, Liyan Wang, Dishan Li and Wenhu Liu

Department of Nephrology, Beijing Friendship Hospital, Capital Medical University, Beijing, China

Table 1. Rates of achieving target outcomes after MWA in patients with severe SHPT undergoing hemodialysis.

	Before MWA	After MWA
Primary outcomes		
Response	NA	38.46% (10/26)
Recurrence	NA	30% (3/10)
No Response	NA	61.54% (16/26)
Secondary outcomes		
Calcium	50% (13/26)	30.77% (8/26)
Phosphorus	15.38% (4/26)	30.77% (8/26)

NA: not applicable.

RESULTADOS ÓPTIMOS DE LA PARATIROIDECTOMÍA

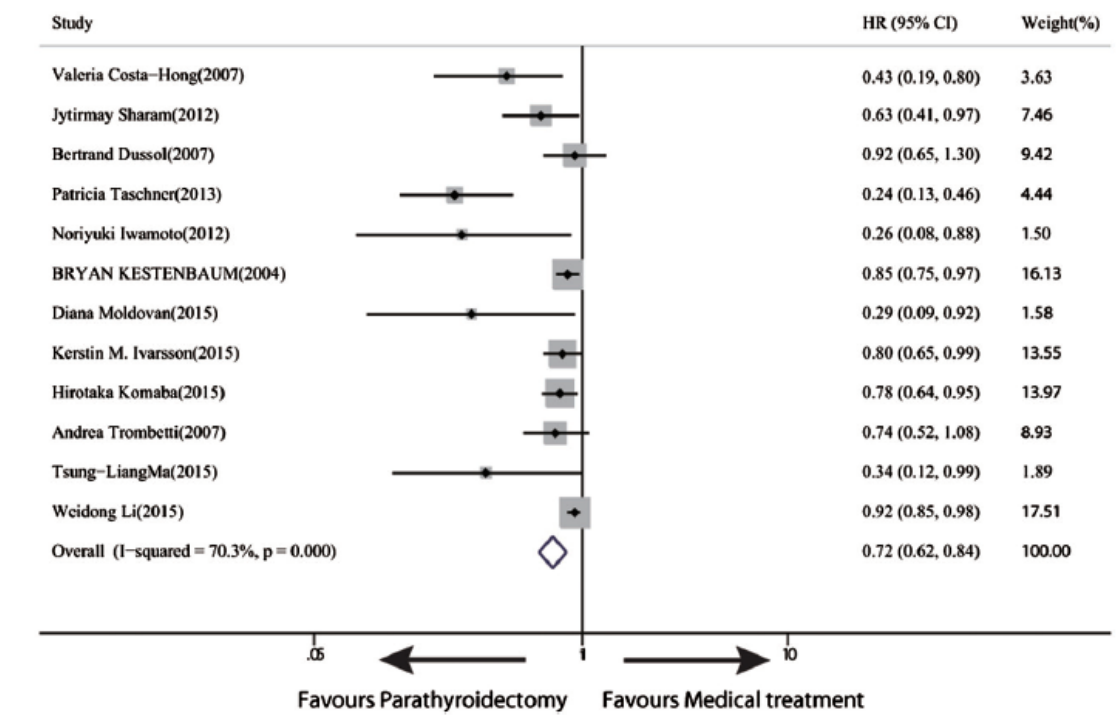

Figure 3. Forest plot for all-cause mortality.

RENAL FAILURE, 2016
VOL. 38, NO. 7, 1050–1058
http://dx.doi.org/10.1080/0886022X.2016.1184924

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CLINICAL STUDY

Long-term mortality after parathyroidectomy among chronic kidney disease patients with secondary hyperparathyroidism: a systematic review and meta-analysis

Lin Chen[a]*, Kongbo Wang[b]*, Shanlan Yu[c], Liping Lai[d], Xiaoping Zhang[e], Jingjing Yuan[f] and Weifeng Duan[g]

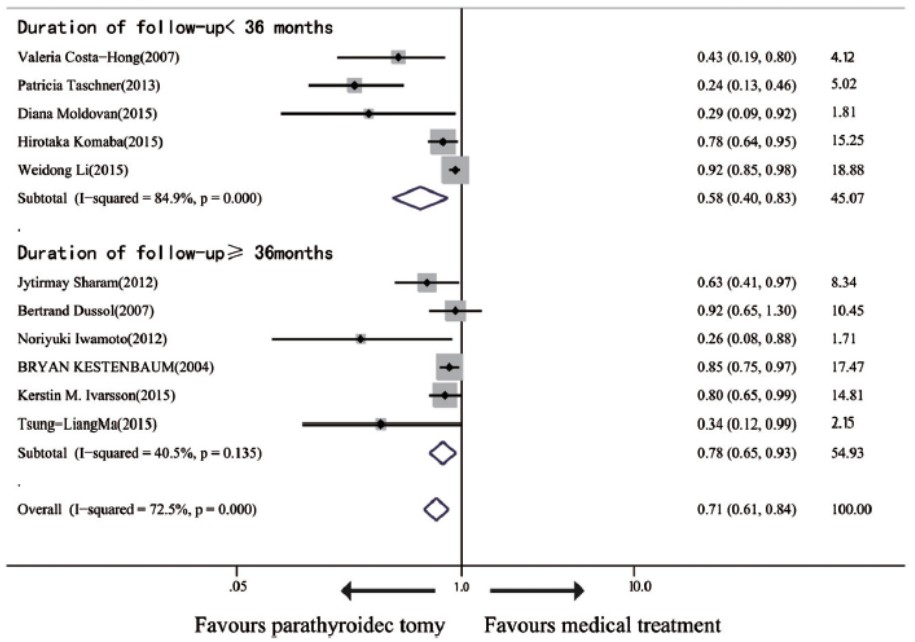


Figure 4. Forest plot for all-cause mortality, according to duration of follow-up.

RECURRENCIA/PERSISTENCIA

- **EMBRIOLOGÍA**
- **IMÁGENES DIAGNÓSTICO LOCALIZACIÓN**

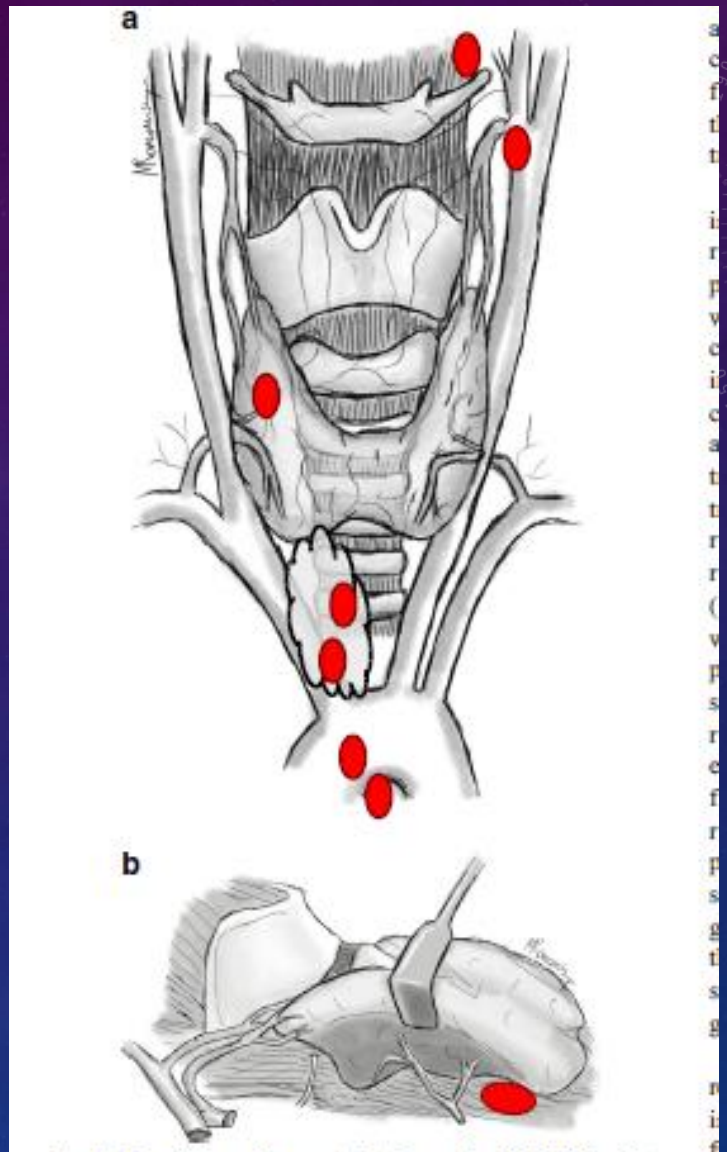
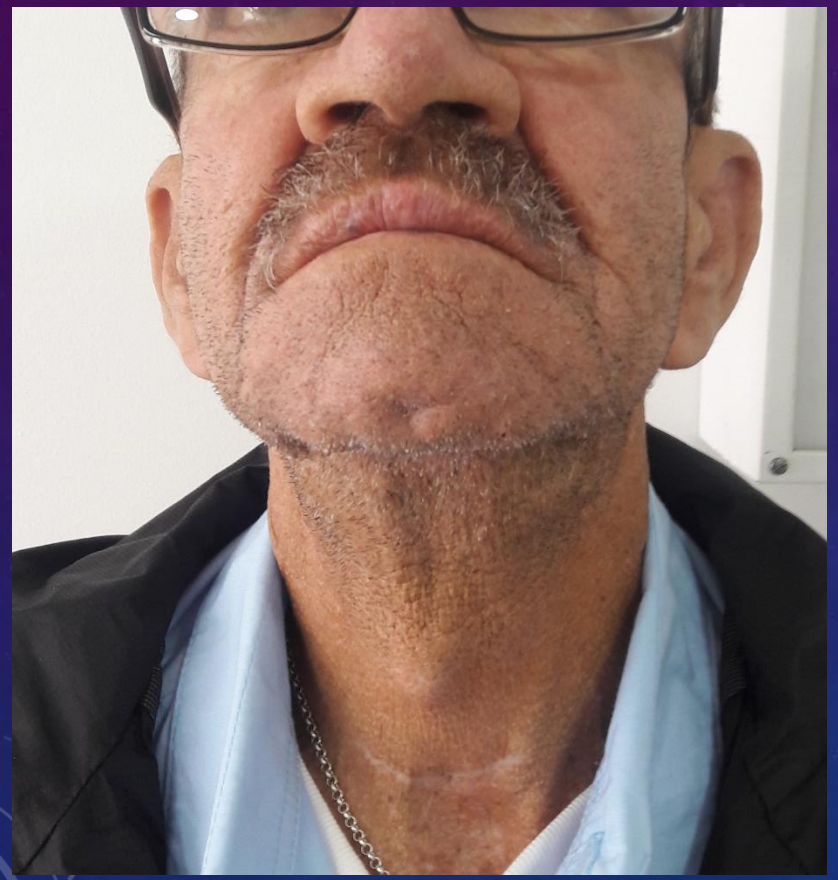


Fig. 1 a Localization of the resected ectopic parathyroid gland in patients with rHPT (*anterior-posterior view*). Localization of ectopic and supernumerary parathyroid glands: mediastinal outside thymus, retroesophageal space, intrathymic, intrathyroid, near hyoid bone, and near carotid sheath. b Localization of the resected ectopic parathyroid gland in patients with rHPT (*lateral view*). Localization of ectopic gland: retroesophageal space

RECURRENCIA/PERSISTENCIA

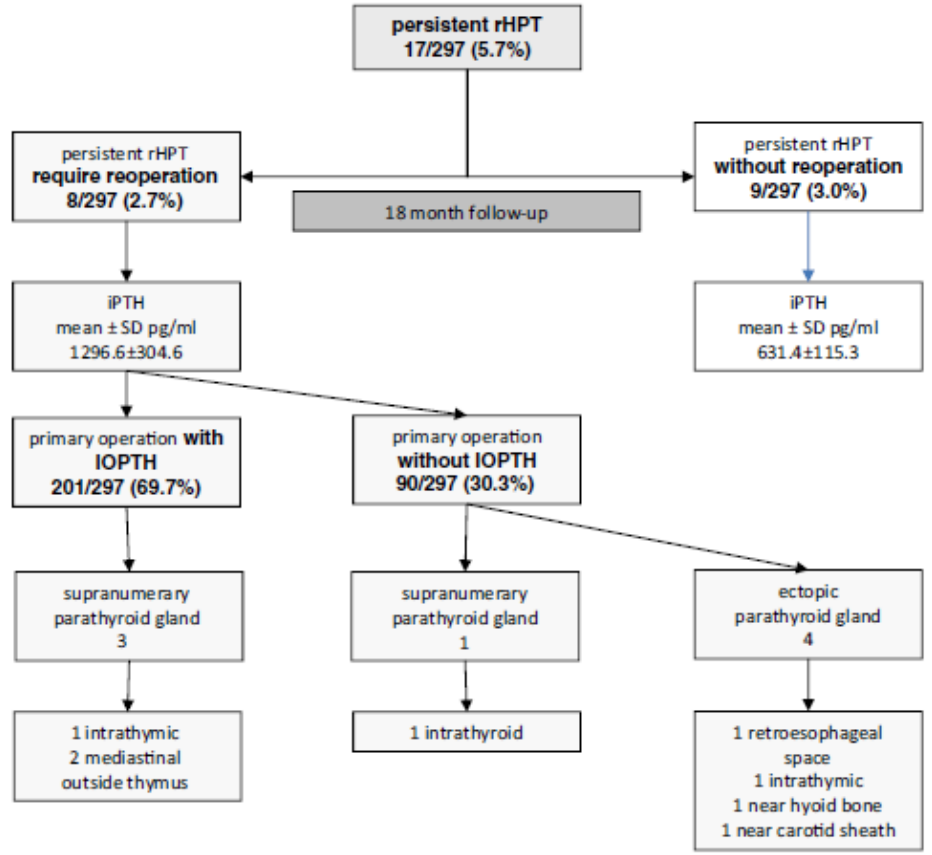


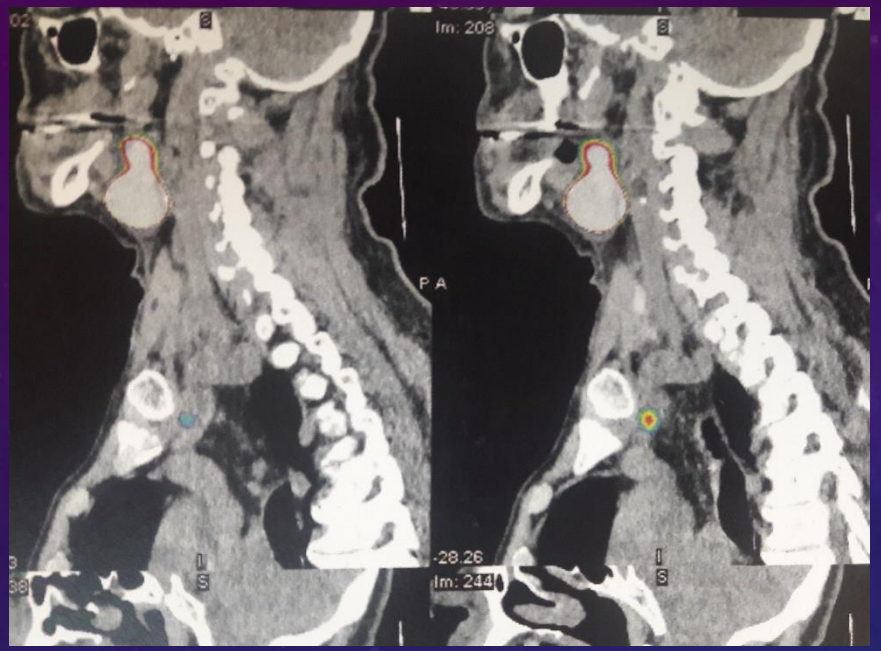
Langenbecks Arch Surg (2016) 401:965–974
DOI 10.1007/s00423-016-1447-7

ORIGINAL ARTICLE

Subtotal parathyroidectomy for secondary renal hyperparathyroidism: a 20-year surgical outcome study

Aleksander Konturek[1] · Marcin Barczyński[1] · Małgorzata Stopa[1] · Wojciech Nowak[1]




Im: 208
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Im: 244

Cardiovasc Intervent Radiol (2018) 41:63–72
https://doi.org/10.1007/s00270-017-1757-3

CIRSE CrossMark

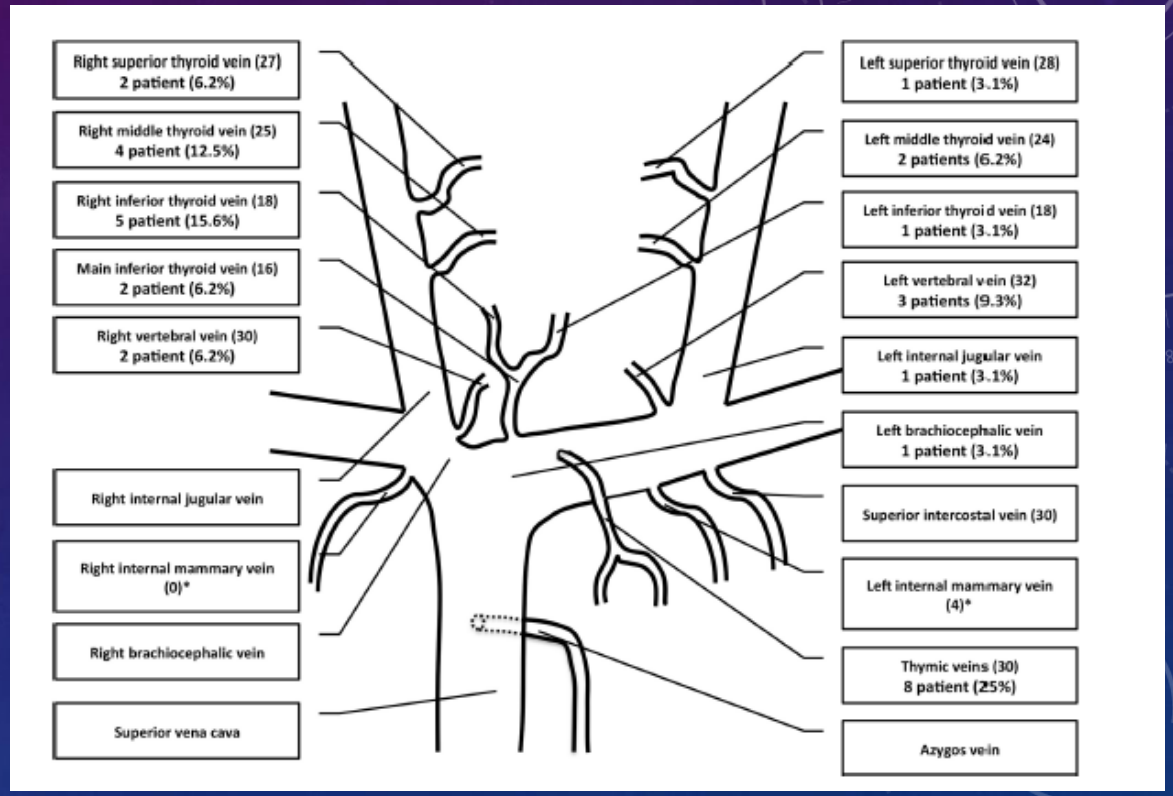
CLINICAL INVESTIGATION VENOUS INTERVENTIONS

Eleven-Year Retrospective Report of Super-Selective Venous Sampling for the Evaluation of Recurrent or Persistent Hyperparathyroidism in 32 Patients

Peiman Habibollahi[1] · Benjamin Shin[1] · Sara P. Shamchi[2] · Heather Wachtel[3] · Douglas L. Fraker[4] · Scott O. Trerotola[1]

Table 2 SSVS and surgical findings in patients with positive SVS

Patient number	SVS		SSVS		Surgical finding	Biochemical cure following surgery (Y/N)	SVS/surgery correlation (Y/N)
	Positive vein	Gradient	Positive vein	Gradient			
7	Left brachiocephalic	3.4	Left mid thyroid	14.1	Left lower adenoma	Y	Y
8	Left brachiocephalic	9.4	Thymic vein	43.1	Parathyroid adenoma in thymus	Y	Y
11	Left brachiocephalic	2.0	Left vertebral	33.1	Left lower adenoma	Y	Y
12	Left brachiocephalic	2.3	Left inferior thyroid	43.1	Parathyroid carcinoma in left neck lymph node	N (metastatic disease)	Y
15	Left brachiocephalic	3.2	Left middle thyroid	22.4	Adenoma in undescended left lower parathyroid	Y	Y
17	Left brachiocephalic	4.3	Left brachiocephalic	4.3	Thymic parathyromatosis	Y	Y
18	Left internal jugular	8.5	Left internal jugular	8.5	Left high retropharyngeal parathyroid adenoma	Y	Y
26	Left internal jugular	7.6	Left superior thyroid	23.7	Left upper adenoma	Y	Y
29	Right brachiocephalic	2.6	Left vertebral	8.1	Left upper parathyroid hyperplasia	Y	N



CONCLUSIONES

Experiencia con paratiroidectomía quirúrgica en pacientes con enfermedad renal crónica e hiperparatiroidismo terciario

Experience with surgical parathyroidectomy in patients with chronic kidney disease and tertiary hyperparathyroidism

VALENTINA SANINT, CÉSAR AUGUSTO RESTREPO, ANDRÉS IGNACIO CHALA •

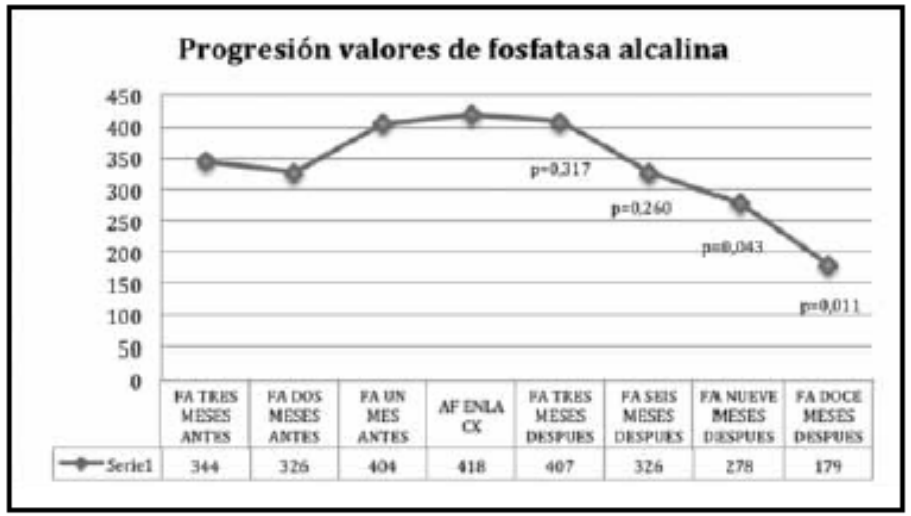


Figura 5. *Progresión en los valores de fosfatasa alcalina a lo largo del periodo de observación en mg/dL.*

- **EVALUACIÓN INTEGRAL**
- **CONOCIMIENTO EMBRIOLOGÍA/ANATOMÍA**
- **ECOGRAFÍA COMO IMÁGENES PREOPERATORIAS**
- **TECNICA ESTANDAR. TOTAL+AT VERSUS SUBTOTAL**

CONCLUSIONES

Experiencia con paratiroidectomía quirúrgica en pacientes con enfermedad renal crónica e hiperparatiroidismo terciario

Experience with surgical parathyroidectomy in patients with chronic kidney disease and tertiary hyperparathyroidism

Valentina Sanint, César Augusto Restrepo, Andrés Ignacio Chala •

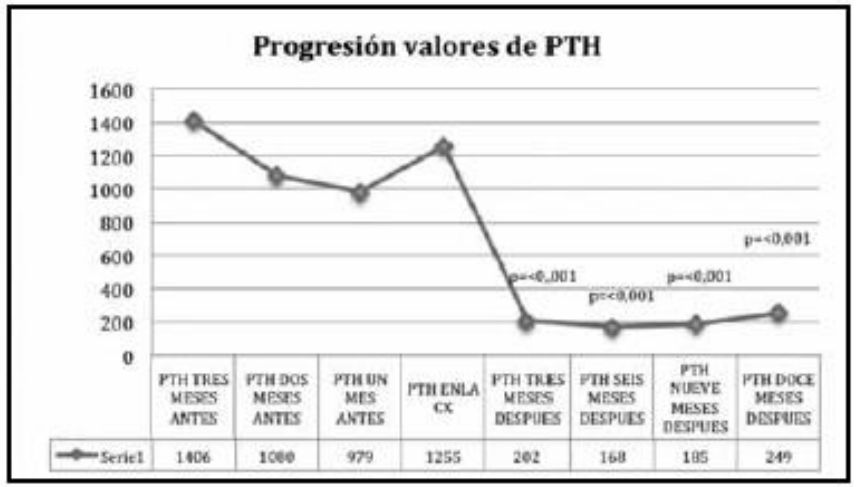


Figura 6. *Evolución en los valores de PTH a lo largo del periodo de observación en pg/dL.*

- **SEGUIMIENTO POSTOPERATORIO RESULTADOS /MORBILIDAD/RECURRENCIA-PERSISTENCIA**
- **EN RECURRENCIA-PERSISTENCIA IMÁGENES IDENTIFICACIÓN**
- **COMUNICACIÓN FLUIDA NEFRÓLOGO-CIRUJANO-PACIENTE**