Surgery versus Mohs for facial Basal Cell Carcinoma– 10 years follow-up

Nicole Kelleners-Smeets
Dermatologist

Maastricht UMC+

academisch ziekenhuis Maastricht azM | Maastricht University

Content

- Why a randomized controlled trial?
- Short term results
- 10 year follow-up data
- Limitations

Mohs

Figure 1. Dr. Mohs and assistants in 1954.

CHEMOSURGERY

A MICROSCOPICALLY CONTROLLED METHOD OF CANCER EXCISION

FREDERIC E. MOHS, M.D.

MADISON, WIS.

Archives of surgery 1941

British Journal of Dermatology 2004; 151: 141–147. DOI: 10.1111/j.1365-2133.2004.06047.x

Dermatological Surgery

Mohs' micrographic surgery for treatment of basal cell carcinoma of the face—results of a retrospective study and review of the literature

N.W.J.SMEETS, D.I.M.KUIJPERS, P.NELEMANS,* J.U.OSTERTAG, M.E.J.M.VERHAEGH,† G.A.M.KREKELS AND H.A.M.NEUMANN‡

720 BCCs

Recurrences of primary BCC 3.6%; recurrences of recurrent BCC 6.5%

Table 4. Studies reporting on 5-year recurrence rate for primary and/or recurrent basal cell carcinoma

Author	N	Prim. (n)	Rec (n)	Died	Lost FU/ < 5 years	Prim 5-year FU	Rec 5-year FU	Locality	Mean size (cm)	Rec % prim	Rec % rec	Fixed or fresh
Tromovitch, 1966[16]	102		102				102	Most face	0·5–12		6·9	Fixed
Sakura, 1979[15]	40		40				40	Head	1·9		12	Fixed
Mohs, 1981[12]	576	–	–	116	16	385	59	Scalp	–	0	6·8	Fixed and fresh
Robins, 1985[17]	631	–	–			318	313	Peri-ocular	–	1·9	6·4	–
Mohs, 1986[13]	1773	–	–	285	74	1124	290	Eye	–	0·6	7·6	Fresh
Mohs, 1988[14]	1213	–	–	240	44	748	181	Ear	–	1·7	7·8	Fixed and fresh
Julian, 1997[11]	228	–	–	19	78	58	83	–	1·9	1·7	4·8	Fresh
Wennberg, 1999[10]	248	–	–		20	87	141	Most head/ neck	–	6·5	10	Fresh

–, Not mentioned; N, total number; Prim, primary; Rec, recurrence; FU, follow-up.

Recurrence primary BCC 0-6.5%
Recurrence recurrent BCC 4.8-12%

Mohs versus surgical excision; a RCT

Why?

Acta Derm Venereol (Stockh) 1999; 79: 2–3

FOR DEBATE

The Case against Micrographically Controlled Skin Surgery

SAM SHUSTER

Medical School, University of Newcastle upon Tyne, United Kingdom

BRITISH JOURNAL OF PLASTIC SURGERY

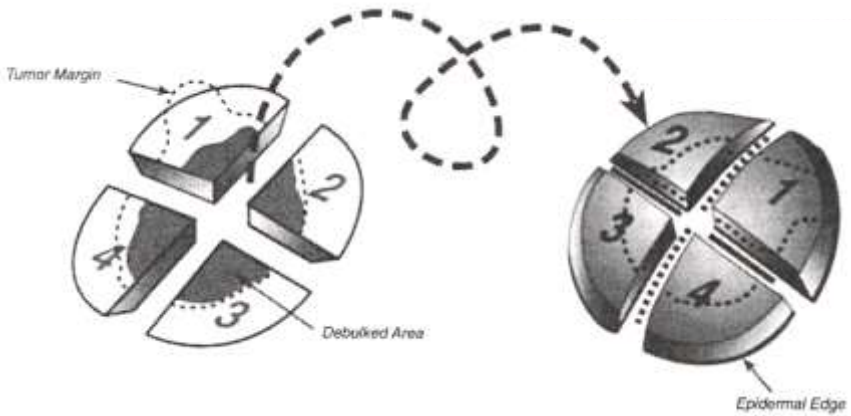
Mohs Surgery of basal cell carcinoma—a critical review

C. M. Lawrence

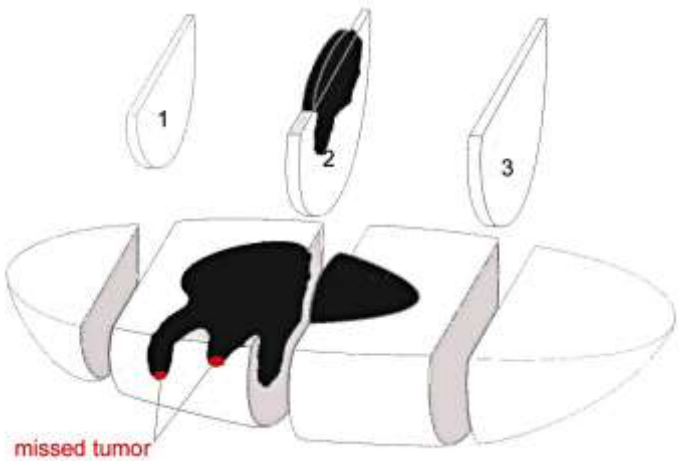
Dermatology Department, Royal Victoria Infirmary, Newcastle, UK

technique may be superior to existing methods and offer all the advantages its exponents claim. However, before it can become generally accepted these advantages will have to be demonstrated by controlled prospective clinical studies.

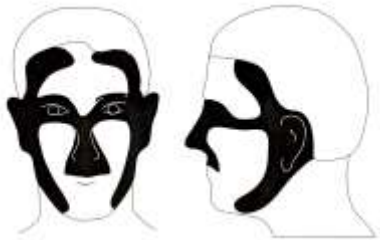
Mohs versus surgical excision



vs.



Mohs versus surgical excision; a RCT



408 primary BCC en 204 recurrent BCC

- Primary: facial BCC at least 1 cm
  - in H-zone
  - aggressive histopathological subtype

- Recurrent: first or second facial BCC

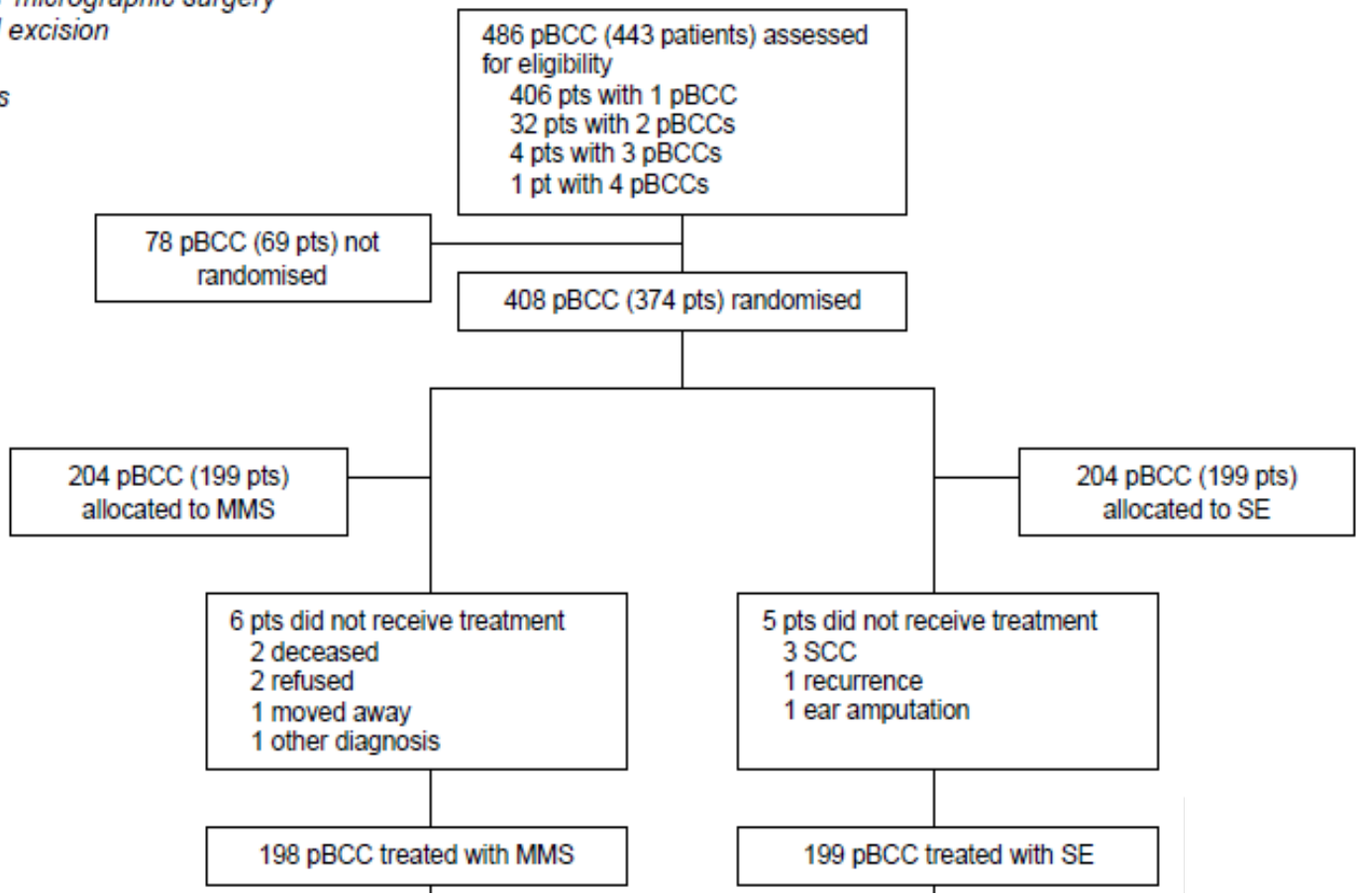
All high risk facial BCC

Mohs versus surgical excision; a RCT

- Both procedures first excision 3 mm margin
- Incomplete excision → second excision with 3 mm margin
- Second incomplete excision → Mohs

Primary BCC

MMS= Mohs' micrographic surgery
SE= surgical excision
pt= patient
pts = patients



	SE (n=204)	MMS (n=204)
Location		
Forehead/temple	65 (32%)	53 (26%)
Cheek/chin	16 (8%)	19 (9%)
Nose/paranasal	62 (30%)	69 (34%)
Lips	8 (4%)	14 (7%)
Periocular	16 (8%)	16 (8%)
Ears	16 (8%)	9 (4%)
Periauricular	21 (10%)	24 (12%)
Facial H zone		
Yes	196 (96%)	181 (89%)
No	8 (4%)	20 (10%)
Unknown	0	3
Histopathological type		
Non-aggressive	116 (57%)	96 (47%)
Aggressive	88 (43%)	105 (52%)
Unknown	0	3
Size		
Mean diameter (mm [SD])	15·97 (8·17)	13·76 (6·43)
Mean area (cm^2 [SD])	1·77 (2·13)	1·28 (1·36)

Table 1: Tumour characteristics of primary basal-cell carcinomas

Treatment characteristics pBCC

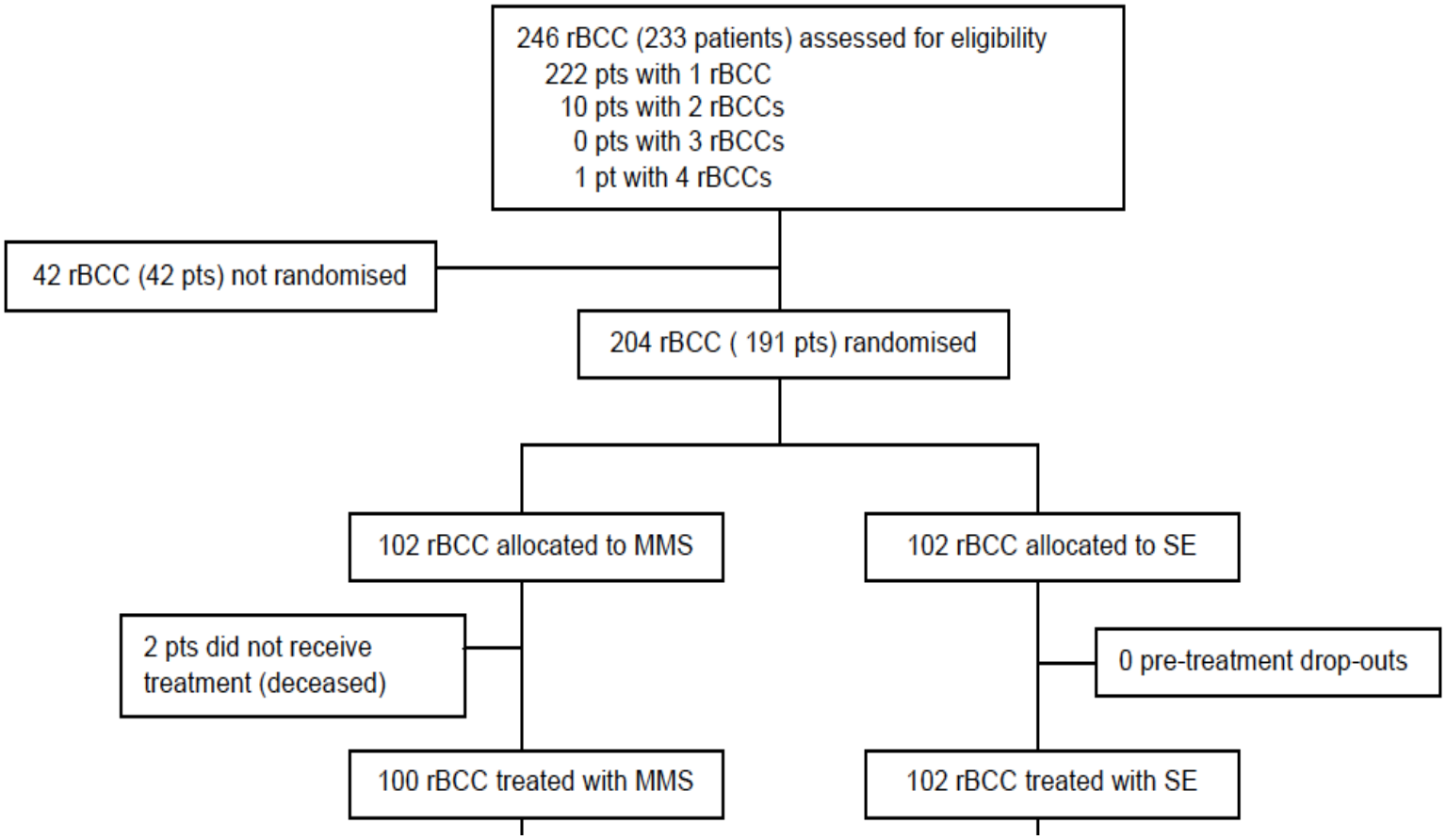
- 1 in 5 (18%) incomplete after 1 excision
- 2% incomplete after 2 excisions

- Mean number of Mohs stages; 1.77

- Defects were significantly larger in patients with multiple excisions compared to defects in patients with multiple Mohs stages

- 3.5% in the primary group was finally treated with MMS instead of SE

Recurrent BCC



	SE (n=102)	MMS (n=102)
Location		
Forehead/temple	46 (45%)	38 (37%)
Cheek/chin	10 (10%)	12 (12%)
Nose/paranasal	29 (28%)	23 (23%)
Lips	1 (1%)	6 (6%)
Periocular	5 (5%)	6 (6%)
Ears	4 (4%)	8 (8%)
Periauricular	7 (7%)	9 (9%)
Facial H zone		
Yes	81 (79%)	85 (83%)
No	21 (21%)	17 (17%)
Histopathological type		
Non-aggressive	52 (51%)	41 (40%)
Aggressive	49 (48%)	60 (60%)
Unknown	1	1
Size		
Mean diameter (mm [SD])	19·42 (12·05)	17·86 (10·67)
Mean area (cm² [SD])	2·70 (5·06)	1·97 (2·71)

Table 2: Tumour characteristics of recurrent basal-cell carcinomas

Treatment characteristics rBCC

- 1 in 3 (32%) incomplete after 1 excision
- 8 % incomplete after 2 excisions

- Mean number of Mohs stages; 2.00

- 17 % in the recurrent group was (finally) treated with MMS instead of SE

Mohs versus surgical excision; RCT 5 year results

- Primary BCC
  - No significant difference in recurrence rates (4,1 vs 2,5 %)

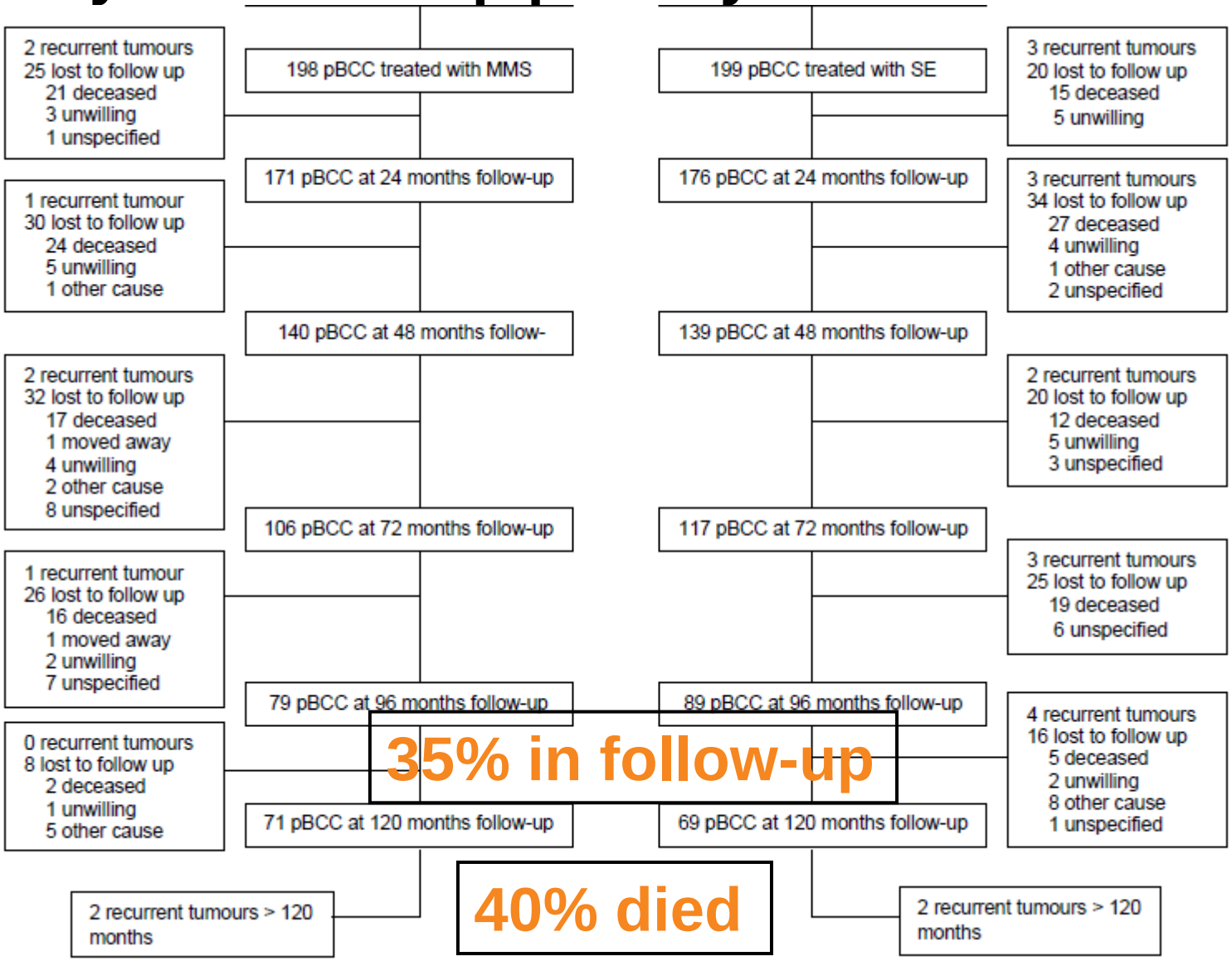
- Recurrent BCC
  - Significantly more recurrences following SE (2,4 vs 12,1%)

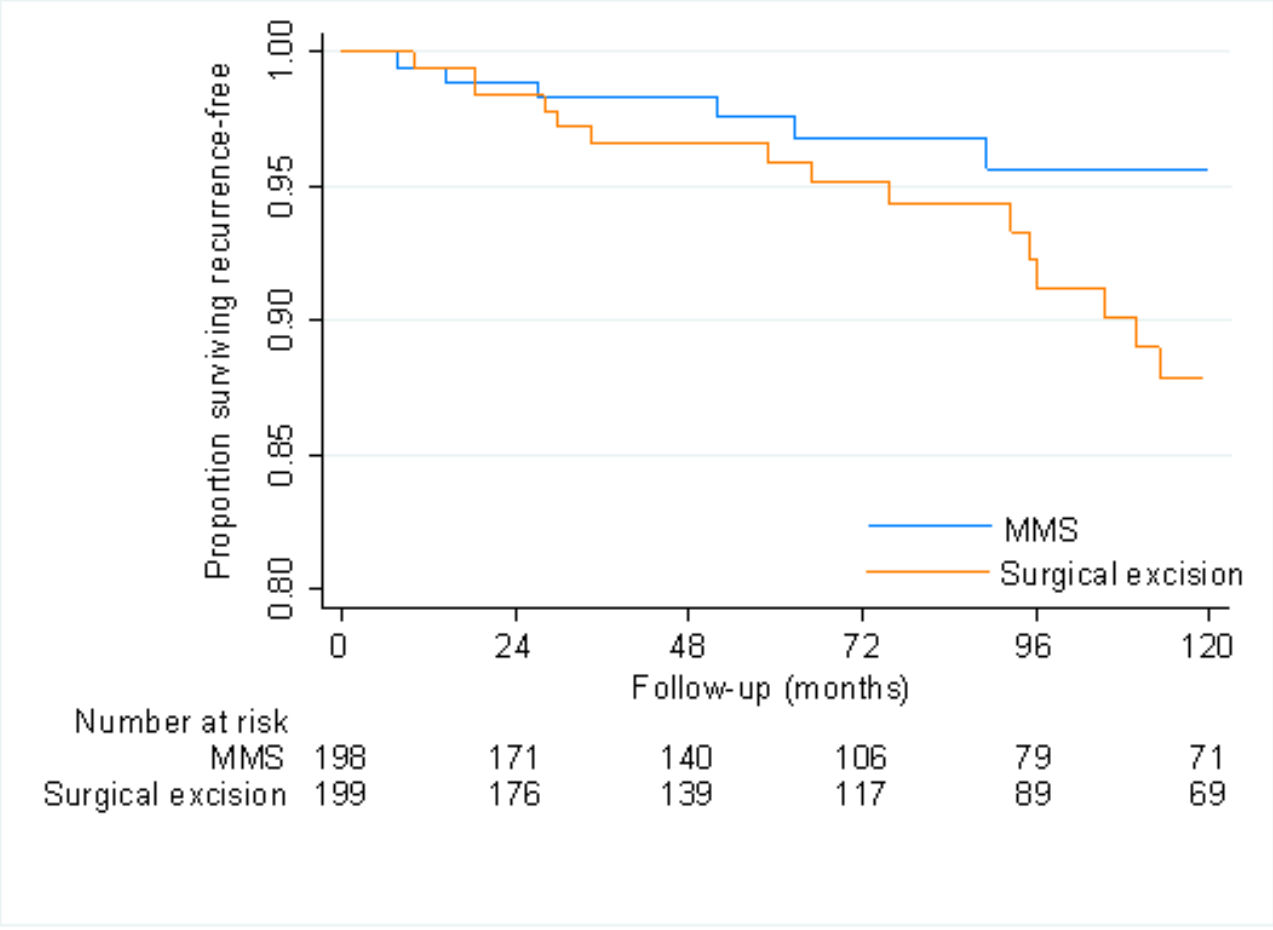
Smeets N et. al. Lancet 2004; 364: 1766-72

Mosterd K et. al. Lancet Oncol 2008, 9(12), 1149-56

Long term follow-up (10 year)

10 year follow-up primary BCC

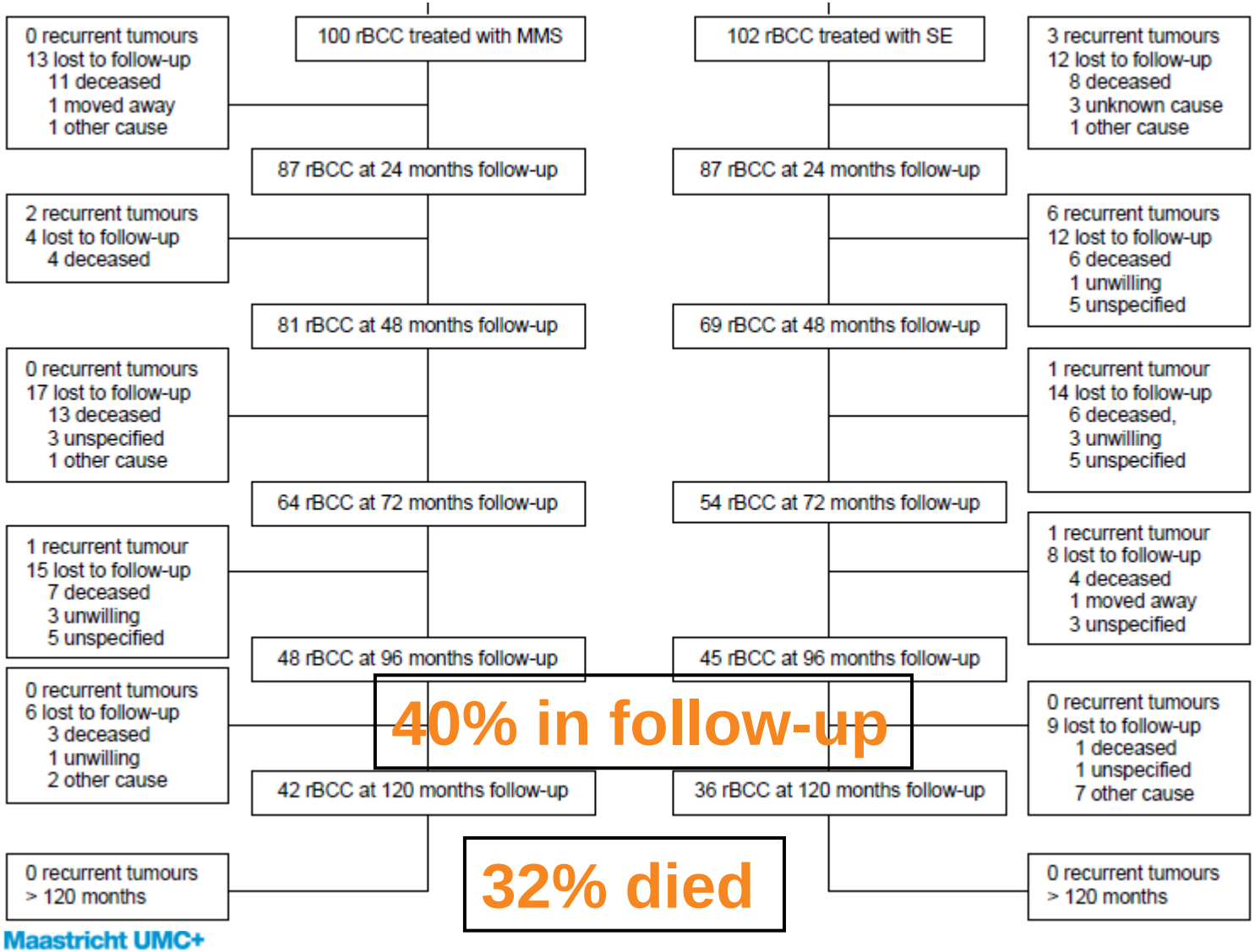




4.4 % recurrences following MMS
12.2 % recurrences following SE
P= 0.10

Van Loo E et.al. Eur J Cancer. 2014 Nov; 50(17): 3011-20

10 year follow-up recurrent BCC



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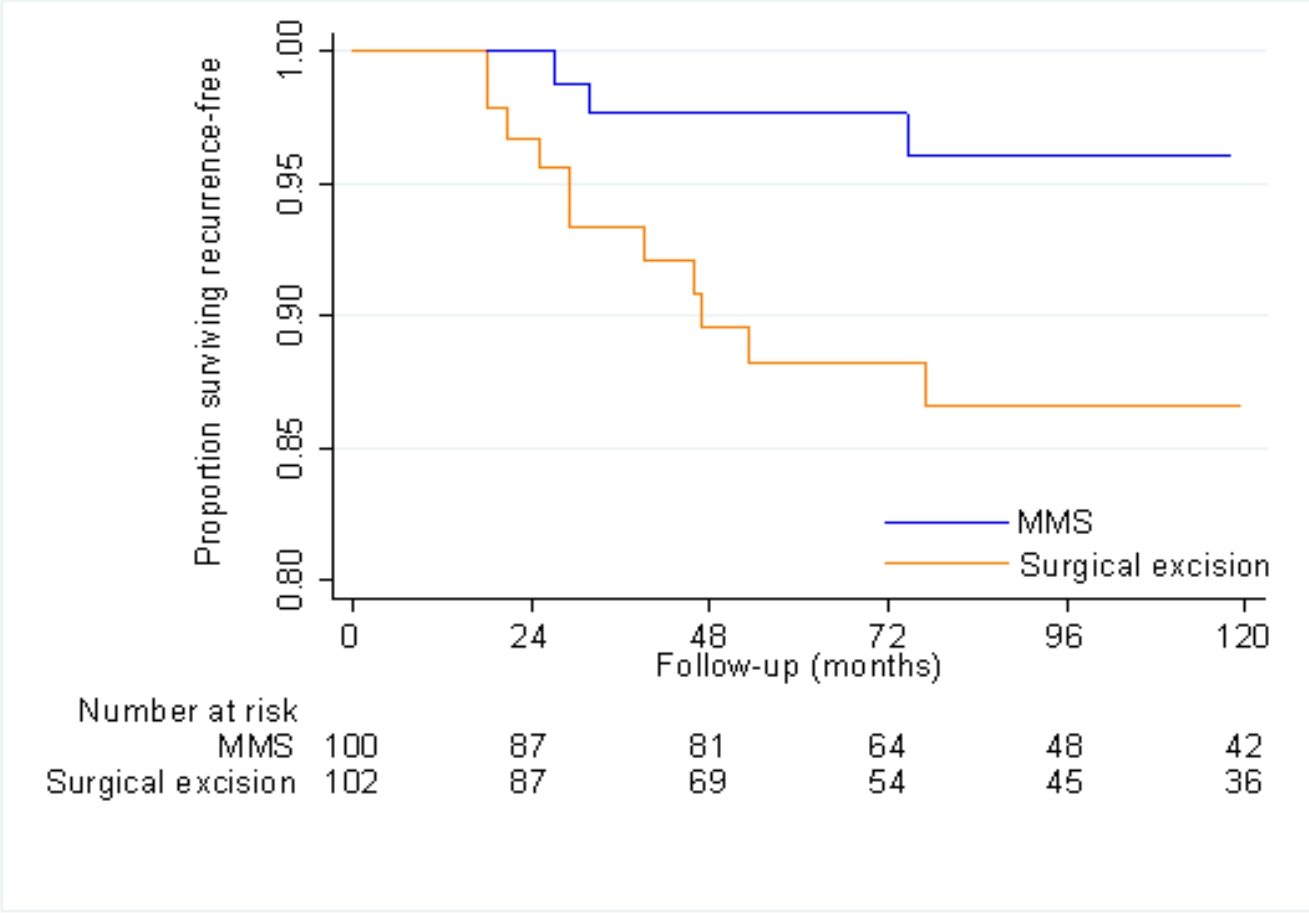

3.9 % recurrences following MMS
13.5 % recurrences following SE
P= 0.023

Limitations of this RCT

- Patients not willing to participate
- Standard surgical margin of 3 mm
- Large number lost to follow-up
- Cross-overs (3.5% in the pBCC and 17% in the rBCC group) $\Rightarrow$ intention-to-treat analysis

Mohs surgery versus conventional excision: 10 year follow-up conclusion

- Fewer recurrences following Mohs surgery
  - 4.4 vs 12.2% for primary BCC
  - 3.9 vs 13.5% for recurrent BCC
- A substantial proportion of recurrences occurred after more than 5 years post-treatment: 56% for pBCC and 14% for rBCC

Evidence- versus expert-based

FROM THE ACADEMY

AAD/ACMS/ASDSA/ASMS 2012 appropriate use criteria for Mohs micrographic surgery: A report of the American Academy of Dermatology, American College of Mohs Surgery, American Society for Dermatologic Surgery Association, and the American Society for Mohs Surgery

Ad Hoc Task Force: Suzanne M. Connolly, MD (Chair),[a,*] Diane R. Baker, MD,[b,†] Brett M. Coldiron, MD,[c,†] Michael J. Fazio, MD,[d,‡] Paul A. Storrs, MD,[e,//] Allison T. Vidimos, RPh, MD,[f,†] Mark J. Zalla, MD,[c,g,¶,§] Jerry D. Brewer, MD,[h] Wendy Smith Begolka, MBS[i]

Ratings Panel: Timothy G. Berger, MD,[j,†] Michael Bigby, MD,[k,†] Jean L. Bolognia, MD,[l,†] David G. Brodland, MD,[m,‡] Scott Collins, MD,[n,§] Terrence A. Cronin, Jr, MD,[o,//] Mark V. Dahl, MD,[a,†] Jane M. Grant-Kels, MD,[p,†] C. William Hanke, MD,[q,‡] George J. Hruza, MD,[r,§] William D. James, MD,[s,†] Clifford Warren Lober, MD, JD,[t,//] Elizabeth I. McBurney, MD,[u,†] Scott A. Norton, MD, MPH,[v,†] Randall K. Roenigk, MD,[h,†] Ronald G. Wheeland, MD,[w,†] and Oliver J. Wisco, DO[x,†]

Scottsdale and Tucson, Arizona; Lake Oswego and Tigard, Oregon; Cincinnati and Cleveland, Ohio; Sacramento and San Francisco, California; Palos Heights and Schaumburg, Illinois; Florence, Kentucky; Rochester, Minnesota; Boston, Massachusetts; New Haven and Farmington, Connecticut; Pittsburgh and Philadelphia, Pennsylvania; Miami and Tampa, Florida; Indianapolis, Indiana; Chesterfield, Missouri; New Orleans, Louisiana; Washington, District of Columbia; and Biloxi, Mississippi

J AM ACAD DERMATOL
OCTOBER 2012

B. Primary aggressive BCC (healthy or immunocompromised patients)

Indication	Size, cm	Appropriate use score (1-9) Area H	Area M	Area L
4	≤0.5	A (8)	A (8)	U (6)
5	0.6-1	A (9)	A (8)	A (7)
6	1.1-2	A (9)	A (9)	A (8)
7	>2	A (9)	A (9)	A (8)

C. Primary nodular BCC (healthy patients)

Indication	Size, cm	Appropriate use score (1-9) Area H	Area M	Area L
8	≤0.5	A (7)	A (7)	I (3)
9	0.6-1	A (8)	A (8)	I (3)
10	1.1-2	A (9)	A (8)	U (6)
11	>2	A (9)	A (9)	A (7)

Areas of body

- Area H: "Mask areas" of face (central face, eyelids [including inner/outer canthi], eyebrows, nose, lips [cutaneous/mucosal/vermillion], chin, ear and periauricular skin/sulci, temple), genitalia (including perineal and perianal), hands, feet, nail units, ankles, and nipples/areola.
- Area M: Cheeks, forehead, scalp, neck, jawline, pretibial surface.
- Area L: Trunk and extremities (excluding pretibial surface, hands, feet, nail units, and ankles).

Evidence based;

Less recurrences following

Mohs vs standard excision in high risk facial basal cell carcinoma