Facial transplantation in a blind patient:

Psychological, marital and family outcomes at 15 months follow-up

Gilbert MD Lemmens[1]
Carine Poppe[2]
Hannelore Hendrickx[3]
Nathalie A Roche[4]
Patrick C Peeters[5]
Hubert F Vermeersch[6]
Xavier Rogiers[2]
Kristiane Van Lierde[7]
Phillip N Blondeel[4]

[1]Department of Psychiatry, [2]Department of General and Hepato-biliary Surgery and Transplantation, Transplantation centre, [3]Burn Unit, [4]Department of Plastic and Reconstructive Surgery, [5]Department of Nephrology, [6]Department of Head and Neck Surgery, [7]Department of Speech, Language and Hearing Sciences, Ghent University Hospital, University of Ghent, Ghent, Belgium

- Face = central in identity, attractiveness and social interactions
- Severe facial disfigurement ➔ depression, anxiety, low self-esteem and quality of life, poor marital and social relationships and changes in body image
- Traditional plastic and reconstructive surgery techniques ➔ poor aesthetic and functional outcomes and additional stress and morbidity

Furr et al, Plast Reconstr Surg 2007; Soni et al, Burns 2011, Shanmugarajah et al, Int J Surg, 2011

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Composite tissue allotransplantation of the face

✔ 31 face transplants worldwide

✔ Reports of the first 18 transplants

surgically feasible and technically successful

psychological findings:
- improved quality of life
- less psychological distress and depression
- less verbal abuse
- good acceptance of the new face and social (re)-integration

Coffman et al, Psychosomatics 2013; Khalifian et al, Lancet 2014

BLINDNESS

CONTRA
?? Participation in the therapy required following transplantation
?? Regular self-monitoring for rejection.
?? Being affected by social reactions to their disfigurement
?? Appreciation of the visual aesthetics of the transplant.

PRO
?? Functional, social, rehabilitative and ethical grounds.

Case-reports:
similar sensory-motor and psychological recovery as sighted patients

Carty et al, Plast Reconstr Surg 2012; Pomahac al, J Plast Reconstr Aesthet Surg 2011

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Aims of the study:

to investigate different aspects of psychological, marital and family functioning of a **blind patient and partner** pre- and post transplantation.

Participants and selection

- 54-year-old- male patient, female partner (52y)
- Important loss of central facial tissues (>2/3)

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Participants and selection

Psychological exclusion criteria: alcohol and substance abuse, schizophrenia and other psychotic disorders, personality disorder causing psychological instability

Protocol:

- Psychiatric and psychological assessment before surgery (3months after trauma, lifetime not current depressive disorder)
- Regular psychiatric and psychological follow-up (5y after surgery)

Assessment

Patient & partner

- Beck Depression Inventory II (BDI-II)
- Spielberger State Anxiety Inventory (STAI)
- Beck Hopelessness Scale (BHS)
- Utrecht Coping List (UCL)
- Temperament and Character Inventory (TCI)
- Dutch Resilience Scale (RS-nl)
- Family Assessment Device (FAD)
- Dyadic Adjustment Scale (DAS)
- Quality of Relationships Inventory (QRI)

Patient

- Illness Cognition Questionnaire (ICQ)
- 36-item Short Form Health Survey (SF-36)
- MINI psychiatric interview

Before and **after transplantation** and **at 15 months** post surgery.

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Data analyses (N=1)

- Comparison with mean nonclinical population score or cutoff scores
- Reliable change index
  - RCI= (posttest score-pretest score)/Sdiff(=standard error of difference between the two test scores).
  - RCI >1.96

Surgical and medical treatment

Several medical complications

- **impaired glucose tolerance** (month 1)
- an **abscess with *Aspergillus fumigatus*** at the proximal mandibular plate (month 3)
- a **grade 4 rejection** of the graft and a **sinusitis** due to *Pseudomonas aeruginosa* (week 15)
- **pulmonary nodules** suspect for aspergilloma, **hyponatremia** due to a syndrome of inappropriate secretion of ADH (SIADH) caused by the voriconazole treatment and an asymptomatic CMV viremia (month 6)
- five painful **osteoporotic thoracic vertebral fractures** (month 7)
- **stupor for two days** related to a hyponatremia (116 mmol/L) due to a SIADH caused by the citalopram treatment in combination with fentanyl patches treatment for the fractures pain (month 8),
- relapse of **pulmonary aspergilloma** with a ***Pseudomonas aeruginosa*** **surinfection** pneumonia (month 11)

Re-hospitalization (in total for 137 days) during the first 13 months post transplantation + high frequently outpatient base (between 3-7 hospital visits/ week).

Month 13-15: clinically stable

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Psychological and psychiatric treatment

Protocol:

- Weekly psychological and psychiatric consultation during admission
- 2-weekly psychological and monthly psychiatric consultation when discharged

Pretransplant period:

- 12 psychiatric consultations
- 43 psychological consultations (e.g. 17 individual patient sessions, 7 couple sessions, 19 family (member) sessions)

15 months postsurgery period:

- 35 psychiatric consultations (mainly with the partner) and 4 'psychiatric' family member sessions
- 26 psychological sessions (14 individual patient sessions, 8 couple sessions, 4 family (member) sessions)

Table 1. Psychosocial functioning of the patient and partner

IP= patient, P= partner, SEH=subjective emotional health, BDI-II= Beck depression inventory-II, *=RCI>1.96

	Baseline		Post-op		15 months follow-up	
	IP	P	IP	P	IP	P
SEH self	4	3	4	3	4	3
SEH partner	3	1	4	3	3	3
BDI-II	6	6	0	3	6	4
State anxiety	30	27	20	22	26	29
Trait anxiety	31	24	20	22	28	27
Hopelessness	4	5	1	1	2	3
Illness cognitions						
Helplessness	16		8*		16	
Acceptance	17		24*		19	
Disease benefits	10		24*		18*	
Quality of life						
Physical health	60		95*		35.6*	
Mental health	96.7		98.7		95.6	
Total	78.4		96.9		65.6	

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	IP	P	IP	P	IP	P
Resilience						
Competence	58	63			68*	65
Acceptation	29	31			32*	30
Resilience total	87	94			100*	95
Marital support						
Support	3.6	3.6	3.8	3.6	3.4	2.8*
Conflict	1.5	1.2	1	1.2	1.4	1.3
Depth	3.8	3.8	3.8	3.3	3.7	3.2*
Family functioning						
Problem solving	1.7	1.7	1	1.5	1	1.3
Communication	1.9	2	1.3	1.8	1.1*	2
Roles	1.3	1.2	1.4	1.3	1.1	1.4
Affective responsiveness	2.8	1.7	1.2*	1	1.5*	1.5
Affective involvement	1.3	1.3	1.4	1.1	1.4	1.4
Behavior Control	1.2	1.2	1.3	1.4	1	1.2
Global Functioning	1.3	1.4	1.2	1.2	1.2	1.2
Dyadic adjustment						
Affectional expression	12	10	12	8	12	11
Consensus	65	52	65	58	65	60
Satisfaction	44	44	47	40	40	41
Cohesion	16	17	18	20	18	20
Total	137	123	142	126	135	132

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Baseline

PATIENT and PARTNER

- minimal depressive symptoms
- mild hopelessness
- low state and trait anxiety
- high resilience
- high marital support
- high dyadic adjustment
- healthy family functioning (except for the patient's affective responsiveness subscale)
- No personality disorder

SEH of PATIENT:

- Poor by partner
- Very good by patient

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Post op and at follow-up

Most measures: **slight improvement post surgery**, but **return to pre-transplant levels at follow-up.**

- **PATIENT** (postop & 15 m)
  - Higher resilience of the patient **(RCI: 3.6)**, including competence (**RCI: 3.9**) and acceptation (**RCI: 2.1**) at 15m.
  - Higher affective responsiveness post-op (**RCI: -4.5**) and at 15m (**RCI: -3.6**)
  - Improved communication at 15m (**RCI: -2.6**).
  - Improved physical quality of health postop (**RCI: 8.7**), but strongly decrease at 15m (**RCI: --14.8**).
  - Decreased helplessness (**RCI: -2.9**), higher acceptance (**RCI: 2.4**), improved disease benefits (**RCI: 4.6**) postop and at 15m (**RCI: 2.6**).
- **PARTNER** (15 Months):
  - lower marital support (**RCI: -2.10**) and depth (**RCI: -2.01**)
- **MINI psychiatric interview** at 15 months: no psychiatric disorder

Discussion

- Initial increase and return to pre-surgery levels at 15m
  - successful surgery and the quick and good recovery of the patient post-op
  - many and severe medical complications and the frequent admissions to the hospital
  - return to the normal (pre-transplant) levels after 'transplant honeymoon blues'
- Most psychosocial functioning within a healthy and normative range OR improvement
  - good psychosocial functioning and the personality characteristics
  - intensive psychological and psychiatric support for both the patient and the partner may have supported the couple to better cope with these difficulties.

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Blindness of the patient

- Good psychosocial functioning despite the relatively recently acquired blindness
- No impact on the compliance with and the ability to participate in rehabilitation and the social re-integration of the patient in any way,
- Being blind was not always easy.
- Long-term social reintegration will be more affected by the blindness than by the facial transplantation??

Limitations

- N=1
- Short follow-up

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Conclusion

- Support for positive psychosocial outcomes after facial transplantation
- Support for the expansion of inclusion criteria of facial transplantation to blind patients
- The importance of good psychosocial functioning pre-transplant and an intensive psychological and psychiatric treatment involving the family members

Thank you

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