



Development of a scale for evaluating the severity of disfigurements caused by injuries disease or surgery

Razvoj skale za procenu stepena naruženja koja su nastala zbog povreda, oboljenja i operacija

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Abstract

Background/Aim. Medico-legal aspect of physical disfigurements has been subject of few scientific researches. The aim of this study was to establish a standardized instrument for forensic evaluation of all kinds of physical disfigurements, which has not existed until now. **Methods.** The research was conducted in 3 phases: the first one – drafting a list of disfigurements; the second phase – evaluation of the draft of the disfigurement list provided by 11 experts (plastic surgery lecturers) by the use of the Delphi method; the third one during which 51 medical doctors, members of Serbian Association of Plastic, Reconstructive and Aesthetic Surgery were evaluating the list of disfigurements. **Results.** Totally 176 individual physical disfigurements were described in the first phase of research. In the second phase, 217 disfigurements were established which were classified into 5 degrees of severity 0 – none/very small, 1 – small, 2 – medium, 3 – large, 4 – very large disfigurements. In the third phase, 217 disfigurements were evaluated. **Conclusion.** The first 4-point ordinal scale was established, rating 217 disfigurements, which showed high level of compatibility in practice and which can be used as an instrument for standardization of disfigurements in giving of forensic expertise.

Key words:

forensic medicine; surgery, plastic; cicatrix; compensation and redress; weights and measures; surveys and questionnaires.

Apstrakt

Uvod/Cilj. Sudsko-medicinski aspekt telesnih naruženja do sada je bio predmet malog broja naučnih istraživanja. Cilj ovog rada bio je da se ustanovi standardizovan instrument za sudsko-medicinsku procenu svih vrsta telesnih naruženja koji do sada nije postojao. **Metode.** Istraživanje je realizovano kroz tri sukcesivne faze: prvu – formiranje nacrt liste naruženja nastalih kao posledica povreda, operacija, oboljenja i lečenja; drugu – procena nacrt liste naruženja od strane 11 eksperata (nastavnika plastične hirurgije) primenom Delfi metoda; treću - u kojoj je prethodno formirana lista naruženja procenjivana od strane 51 lekara, članova strukovnog udruženja hirurga specijalista plastične i rekonstruktivne hirurgije. **Rezultat.** U prvoj fazi istraživanja opisano je 176 pojedinačnih telesnih naruženja hipotetički razvrstanih u četiri stepena gradacije. U drugoj fazi formirano je 217 naruženja koja su razvrstana u pet stepeni 0 – bez ili veoma malo, 1 – malo, 2 – srednje, 3 – veliko i 4 – veoma veliko naruženje. U trećoj fazi, 217 naruženja je ponovo ocenjeno, pri čemu je stepen usaglašenosti sa drugom fazom bio visok a to je pokazao Mann-Whitney test. **Zaključak.** Istraživanjem u tri faze konstruisana je petostepena ordinalna skala sa 217 naruženja koja je pokazala visok stepen usaglašenosti među kolegama i koja se može koristiti kao instrument za standardizovano, unificirano merenje naruženja u sudskim veštačenjima.

Ključne reči:

medicina, sudska; hirurgija, plastična; ožiljak; naknada i obeštećenje; mere i merenja; ankete i upitnici.

Introduction

The term disfigurement is defined as an impairment of previous external appearance or body harmony, i.e. the harmony of a body part of an individual or as an impairment of any body function which is reflected in physical appearance¹. In legal terminology, disfigurement refers to any damage suffered by a patient. It represents the link between medical and legal science, both in practical and theoretical terms¹. Living with a disfigurement represents an emotional, social and cultural challenge, since physical appearance is, after all, important in relations with other people². The damaged ones often claim financial compensation for mental anguish suffered because of disfigurement¹. It is believed that mental anguish here arises from the uncomfortable feeling of inferiority and suffering of disfigured individuals, which are particularly caused by reactions and behavior of their social environment (pitiful, repulsive, contemptuous attitude)³. The mission of experts is to evaluate disfigurements, in the most objective manner possible. The expert report submitted to the Court of Law is compiled based on a detailed clinical examination and it includes expert opinion – expertise¹. Although disfigurements are often clear and obvious, it is difficult to establish objective criteria for disfigurement description and evaluation, due to a wide range of existing situations referring to such individuals¹. Therefore, disfigurement and disfigurement expertise remain an inadequately resolved problem.

Previous studies have shown that just few papers on medico-legal aspect of scars and disfigurements in general, have been published⁴. Several scales for scar evaluation and evaluation of the effects of therapy are in use, but these scales do not contribute to the medico-legal evaluation of scars [Vancouver Scar Scale (VSS) and Manchester Scar Scale (MSS)]⁵⁻⁸.

The aim of this study is to provide description and classification for all types of disfigurements according to their severity, all for the purpose of medico-legal expertise in disfigurements.

Methods

The research was conducted in 4 successive phases: the first one – drafting a list of disfigurements occurring as a result of injuries, surgery, illness and treatment; the second phase – evaluation of the draft of the disfigurement list provided by 11 experts (plastic surgery lecturers) using the Delphi method (in 3 iterations); the third one during which 51 medical doctors, members of Serbian Association of Plastic, Reconstructive and Aesthetic Surgery (SRBPRAS) participated in evaluating previously formed list of disfigurements; and the fourth phase during which the list, i.e. scale of disfigurements, formed in the previous, third phase, was applied to actual cases taken from the case-law.

In the process of preparing the questionnaire, 3 groups of disfigurements were hypothetically determined first, according to their exposure to view, i.e. according to the visibility of zones, regions or body parts where disfigurements could be identified. According to this criterion

the first group includes disfigurements of body parts which are always exposed to view (disfigurements of the face, neck, scalp, and hands). The second group includes disfigurements identified on the body parts which are frequently exposed to view (forearms, lower legs, feet) and the third group includes disfigurements of the body parts which are rarely exposed to view (upper arms, thighs, torso, genitals).

After defining these groups, 176 individual disfigurements in total were hypothetically determined within each one of them according to the method of their quantitative and/or qualitative descriptions. Hence, 117 disfigurements were determined within the first group, 15 within the second one and 44 disfigurements within the third group. The following measurement units were used for the purpose of providing quantitative descriptions of disfigurements: 1) percentage (%) of the body surface area covered by disfigurement with respect to the total body surface area (TBSA); 2) the length of linear (expressed in cm) and surface spatial disfigurements (expressed in cm² or mm²); 3) lack (amputation) of the whole organ or a part thereof, expressed in natural numbers (for example: one limb, 2 teeth, 3 fingers) or as a ratio (for example: 1/2 lip, 1/3 earlobe) according to the criterion of functional reconstruction of organs.

Specific characteristics of disfigurements were used for the purpose of providing their qualitative descriptions (for example: relief, elevation, depression etc.)².

The questionnaire was completed by determining 4 possible degrees for classifying each of 176 individually described disfigurements according to the severity criterion. Each of 176 individually determined disfigurements was classified under one of these degrees (degree I – small; degree II – medium; degree III – large and degree IV – very large disfigurements). The questionnaire designed in this way, represented the basis for the application of the Delphi method in the following phase of research. Within the received questionnaire, the experts were provided with the descriptions of individual disfigurements and 4 possible degrees for their classification according to the severity criterion, but they could not see their hypothetical classification under these degrees, nor did they know the individual opinions of other experts.

The first phase included using the method of content analysis and using personal expert experience of the candidates. The findings of research published in the available literature and electronic databases which defined the key concepts (scale, disfigurement, scar/scars, medico-legal evaluation, damage compensation) were used during the content analysis.

Delphi method implies that experts should provide their opinions, without any group discussions, by answering the questions given in the questionnaire in several phases. In each successive stage these experts again answer the questions on which no consensus was reached in the previous phase and they are able to confirm, modify or completely change their answers after analyzing answers of other experts given in the first phase. At the same time, none of the experts knows the identity of other participants nor their individual answers to the questions asked⁹.

For the purpose of this research, the Delphi method was applied by obtaining expert opinions on each proposed disfigurement in the first iteration, whereby experts submitted their opinions individually and anonymously, which referred to the following: a) description, whereby the experts could accept, dismiss, correct or propose a completely new description; b) degree, whereby the experts could classify each proposed disfigurement under one of four offered degrees, according to their severity (I – small; II – medium; III – large and IV – very large disfigurements) provided that each of the proposed disfigurements was observed and evaluated from the distance of 50 cm from an unclothed patient¹.

All disfigurements that most of the experts (more than 50% or at least 6 out of 11) accepted in terms of their description and classified under the same degree, were considered accepted in terms of the description and degree and they were not included in the following iteration. Data on the expert opinions on disfigurements that, in terms of their descriptions, some of the experts dismissed or proposed their corrections, newly proposed disfigurements or disfigurements classified under different degrees, were presented in the following (second) iteration to all experts for another round of decision-making.

This procedure was repeated in the third iteration, during which the consensus was reached among the experts as regards the acceptance, dismissal or correction of each description and degree of disfigurement on which the consensus was not reached in the previous iteration. Up until this iteration, the experts did not know the identity of other participants in the survey, nor did they know who gave what answer in the previous iteration. A selection criterion for qualifying individual descriptions and degrees of disfigurements for the following iteration step was the consensus among the experts (at least 6 out of 11 experts, or more than 50%).

The first 3 phases of the research were conducted in the period between 2013 and 2015, at the Department of Surgery, i.e. the Department of Plastic Surgery, at the School of Medicine, the Universities of Belgrade, Novi Sad and Kosovska Mitrovica. Experts from these scientific areas, medical specialists in plastic and reconstructive surgery, engaged in teaching, participated in this research. The fourth phase research was conducted in April, 2016 in the Third Basic Court in Belgrade. We reviewed the total number of 75 different types of disfigurements that were subjected to forensic expertise in the period between 2005 and 2015. These cases included the evaluation of the severity of disfigurements by authorized forensic experts, who are specialists in forensic medicine, orthopaedics, physical medicine and plastic surgery. In providing their expertise on particular disfigurement, or very small forensic experts could declare that there was no disfigurement – 0, or that the disfigurement is small – 1, medium – 2, large – 3 or very large – 4.

The following statistical methods were used for processing these data: descriptive and inferential statistical analysis and

non-parametric statistical method for testing the significance and strength of concordance (Kendall's W – coefficient of concordance). The first method was used to present individual descriptions of disfigurements in the form of a central tendency measure – the median, as well as the measure of dispersion, presented by the interquartile range. These parameters were complemented by the presentation of the number and percentage of experts who had a consistent position in determining the degree of individual disfigurements. The second method, i.e. testing the significance and strength of concordance was applied at the probability level of $p < 0.05$.

Results

The result of the first phase was a draft of a hypothetical model – a list of disfigurements occurring as a result of injuries, surgery, illness and treatment; the second phase – evaluation of the draft of the disfigurement list provided using the Delphi method. In the first iteration of the Delphi method experts accepted descriptions of all 176 proposed disfigurements. Ninety three out of 176 disfigurements were rated in the same manner as in the hypothetical model draft, whereas 49 disfigurements were rated differently, while consensus was not reached in the first iteration regarding 34 descriptions.

In the second iteration of the Delphi method, the consensus in terms of the evaluation was reached for 30 disfigurements. Kendall's coefficient of concordance (W) (Table 1) was obtained and it represented the level of consensus reached among experts in assessing the degree of disfigurement. In addition, majority of experts agreed that it was necessary to add a new group including 30 descriptions of very small disfigurements. Furthermore, a new description of a small disfigurement was added. The number of disfigurements in the end of this iteration reached 207.

In the third iteration, 4 disfigurements on which no consensus had been reached in two previous iterations, were evaluated. Based on the consensus of the experts involved, 12 descriptions of individual disfigurements were included, whereas 22 descriptions of disfigurements were rephrased and reevaluated in order to achieve greater accuracy of the disfigurement description. Therefore, the total number of descriptions of disfigurements increased from the initial 207 to 217 (Appendix).

The main characteristic of the third phase was the process clustering disfigurements, after the members of SRBPRAS provided their opinions. In that phase the number of disfigurements classified as large and very large disfigurements slightly decreased [from 59 (27.2%) and 37 (17.1%) to 53 (24.4%) and 31 (14.3%) respectively], whereas a slight increase [from 30 (13.8%), 41 (18.9%) and 50 (23.0%) to 32 (14.8%), 45 (20.7%) and 56 (25.8%)] was identified in all other groups (very small, small and medium disfigurements, respectively). Thereby, the total number of disfigurements remained the same, i.e. 217.

Table 1
Statistical indicators of the Delphi method performance in the harmonization of disfigurement evaluations
provided by 11 experts in three iterations

**Code disfigurements	Degreee as per hypothesis	First iteration		Second iteration		Third iteration	
		median (iq*)	approval of experts n (%)	median (iq*)	approval of experts n (%)	median (iq*)	approval of experts n (%)
33a	1	2 (2-3)	5 (45.5)	2 (2-3)	6 (54.5)	2 (2-3)	6 (54.5)
33d	1	3 (2-3)	4 (36.4)	2.5 (2-3)	4 (36.4)	3 (2-3)	6 (54.5)
33e	1	3 (2-4)	5 (45.5)	3 (2-4)	5 (45.5)	4 (2-4)	7 (63.6)
35c	1	3 (2-3)	5 (45.5)	3 (2-3)	5 (45.5)	3 (2-3)	6 (54.5)
1b	2	2 (2-3)	5 (45.5)	3 (2-3)	7 (63.6)	3 (2-3)	7 (63.6)
1c	2	3 (2-4)	4 (36.4)	4 (3-4)	7 (63.6)	4 (3-4)	7 (63.6)
2c	2	2 (2-3)	5 (45.5)	2.5 (2-3)	6 (54.5)	2 (2-3)	6 (54.5)
4b	2	2 (1-3)	5 (45.5)	2 (2-3)	7 (63.6)	2 (2-3)	7 (63.6)
4c	2	3 (2-3)	5 (45.5)	3 (3-3)	9 (81.8)	3 (3-3)	9 (81.8)
7b	2	2 (1-2)	5 (45.5)	2 (2-2)	9 (81.8)	2 (2-2)	9 (81.8)
13c	2	2 (2-3)	5 (45.5)	2 (2-3)	7 (63.6)	2 (2-3)	7 (63.6)
24d	2	3 (2-3)	5 (45.5)	3 (3-3)	9 (81.8)	3 (3-3)	9 (81.8)
25c	2	2 (2-3)	5 (45.5)	2 (2-3)	7 (63.6)	2 (2-3)	7 (63.6)
25d	2	3 (2-3)	5 (45.5)	3 (3-3)	9 (81.8)	3 (3-3)	9 (81.8)
27d	2	3 (2-4)	5 (45.5)	3 (3-4)	8 (72.7)	3 (3-4)	8 (72.7)
28d	2	3 (2-3)	5 (45.5)	3 (2-3)	7 (63.6)	3 (2-3)	7 (63.6)
29d	2	3 (2-3)	5 (45.5)	3 (2-3)	5 (45.5)	3 (2-3)	6 (54.5)
31d	2	3 (2-3)	5 (45.5)	2 (2-3)	7 (63.6)	2 (2-3)	7 (63.6)
32d	2	3 (3-4)	5 (45.5)	3 (3-3)	9 (81.8)	3 (3-3)	9 (81.8)
2d	3	3 (2-3)	5 (45.5)	3 (2-3)	8 (72.7)	3 (2-3)	8 (72.7)
3d	3	3 (3-4)	5 (45.5)	3 (3-4)	8 (72.7)	3 (3-4)	8 (72.7)
4d	3	3 (2-4)	5 (45.5)	4 (3-4)	7 (63.6)	4 (3-4)	7 (63.6)
6d	3	3 (2-3)	5 (45.5)	2 (2-3)	6 (54.5)	2 (2-3)	6 (54.5)
6e	3	3 (2-4)	4 (36.4)	4 (2-4)	6 (54.5)	4 (2-4)	6 (54.5)
15c	3	3 (2-3)	5 (45.5)	2 (2-3)	6 (54.5)		
15d	3	3 (3-4)	5 (45.5)	3 (3-4)	7 (63.6)		
20c	3	2 (2-3)	5 (45.5)	2 (2-2)	9 (81.8)		
24e	3	3 (3-4)	5 (45.5)	3 (3-4)	7 (63.6)	3 (3-4)	7 (63.6)
25e	3	3 (2-4)	5 (45.5)	3 (3-4)	7 (63.6)	3 (3-4)	7 (63.6)
26e	3	3 (3-4)	5 (45.5)	3 (3-4)	6 (54.5)	3 (3-4)	6 (54.5)
27e	3	3 (3-4)	5 (45.5)	3 (3-4)	6 (54.5)	3 (3-4)	6 (54.5)
28e	3	3 (3-4)	5 (45.5)	3 (3-4)	8 (72.7)	3 (3-4)	8 (72.7)
30b	3	2.5 (2-3)	5 (45.5)	2 (2-3)	8 (72.7)	2 (2-3)	8 (72.7)
1d	4	3 (2-4)	5 (45.5)	4 (3-4)	6 (54.5)	4 (3-4)	6 (54.5)
Kendall W signif- icance			0.277		0.517		0.562
<i>p</i>			< 0.0001		< 0.0001		< 0.0001

*Interquartile range of 25th and 75th percentile.

**Code of disfigurement: each disfigurement had a designed code which remained the same throughout the whole study in order to track accurately any potential change in the description of relevant disfigurement.

Discussion

This final ordinal scale of disfigurements confirms that its draft established in the first phase of research, represented a good foundation for the implementation of the following 3 phases of research. In the second and the third phase, it was adjusted and qualitatively improved in a methodologically adequate scientific procedure, particularly with regard to.

The number of descriptions of individual disfigurements and the number of disfigurement severity degrees.

So far, just a few descriptions of disfigurement have appeared in relevant literature (elevated scar, depressed scar, hipertrophic scar etc ⁷. We provided disfigurement description and evaluation in terms of describing a linear scar, a relief scar, a scar with or without contracture, facial or body asymmetry, amputation, etc.

Several scales that provide rating from 1-13 or 1-100 are currently in use exclusively to evaluate scars as a disfigurement. Through a scientific procedure we obtained a scale which enables rating from 0-4 which is more practical.

Until now it was not possible evaluate disfigurements by using score of 0-4 according to the research that we reviewed.

Such results of the fourth phase of research confirmed the existence of good judicial practice, i.e. practice of forensic expert witnesses that turned out to be consistent with the findings of the conducted scientific research to a greater extent. In addition, results of the research may be of use in future forensic expertise, due to the possibility of using the scale of disfigurements as an instrument of expertise.

Conclusion

Through 3 phases of research and with the participation of 62 specialists in plastic and reconstructive surgery, a 5-degree ordinal scale was established, rating the total of 217 disfigurements according to the severity criterion as none/very small (0), small (1), medium (2), large (3) and very large (4) disfigurements.

Such ordinal scale of disfigurements is a result of a scientific process and may be used for uniform assessment of disfigurement severity in giving forensic expertise.

The results of this study indicate the need for their verification in practice and the need for possible adjustment of degrees of disfigurement, the number of individual descriptions of disfigurements, establishing new disfigurements or additionally, more precise definition of existing disfigurements.

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Received on June 19, 2016.
Revised on August 27, 2016.
Accepted on August 29, 2016.
Online First October, 2016.

Appendix

VERY SMALL DISFIGUREMENT (0); n = 32	
Code	Description of disfigurement
6a	Absence or dental caries of on tooth (from one to four)
19a	Slight gait and posture deviation, barely visible (due to contractures in large joints, limping, involuntary movements or palsy)
32a	Asymmetry of male and female genital organs - hardly visible
35e	Amblyopia, poor eyesight
36a	Very small disfigurement of sclera or iris – barely visible
36b	Linear face and/or forehead scar (at the level of the surrounding skin or not), overall length up to 1cm
36c	Multiple benign lesions present on the face and/or forehead (acne scars) up to 1cm ²
36d	Elevated/depressed and/or relief face and/or forehead scar (without contracture) up to 1cm ²
36e	Facial asymmetry, hardly visible at first sight
36f	Minimum eyelid deficiency, hardly visible at first sight
36i	Lack of any part of the earlobe up to 1cm ²
36j	Elevated and/or depressed and/or relief scalp scar up to 2cm ²
36k	Linear scalp scar (at the level of the surrounding skin or not), overall length up to 2cm
36l	Elevated and/or depressed and/or relief hand scar (with or without contracture) up to 2cm ²
36m	Multiple benign lesions present on a hand up to 2cm ²
36n	Elevated / depressed and/or relief neck scar without contracture, up to 2cm ²
36o	Coverage of neck benign lesions (acne scars) up to 2cm ²
36p	Linear neck scar (at the level of the surrounding skin or not), overall length up to 2cm
36q	Linear scar on both hands (at the level of the surrounding skin or not), overall length up to 2cm
36r	Loss of a part of a fingertip and/or finger nail plate
36s	Elevated/depressed/relief forearm and/or lower leg and/or foot scar with or without contracture, up to 8cm ²
36t	Multiple benign lesions present on a forearm and/or lower leg and/or foot (scars), up to 8cm ²
36u	Linear forearm and/or lower leg and/or foot scar (at the level of the surrounding skin or not), overall length up to 4cm
36v	Elevated/depressed/relief torso and/or upper arm and/or upper leg scar, up to 2.5%
36w	Multiple benign lesions present on the torso and/or upper arm and/or upper leg (smallpox scars), up to 2.5%
36x	Linear torso and/or upper arm and/or upper leg scar (at the level of the surrounding skin or not), overall length up to 8 cm
36y	Hardly visible breast asymmetry, imperceivable at first sight
36z	Breast scar, imperceivable at first sight
37a	Asymmetry of genital organs, imperceivable at first sight
37b	Loss of up to 1/2 of glans penis
37c	Lack of up to 2cm ² of vulva
37d	Relief scar of female or male genital organs, imperceivable at first sight, up to 2cm ²

SMALL DISFIGUREMENT (1); n = 45		
Code	Degree	Description of disfigurement
1a		Very mild strabismus, hardly visible
2a		Linear face and/or forehead scar (at the level of the surrounding skin or not), overall length 1- 2cm
2b		Linear face and/or forehead scar (at the level of the surrounding skin or not), overall length 2-5 cm
3a		Multiple benign lesions present on the face and/or forehead (acne scars and/or smallpox scars and/or skin diseases and/or tumors) 1-2cm ²
4a		Elevated and/or depressed and/or relief face and/or forehead scar (without contracture) 1-2cm ²
5a		Slightly visible facial asymmetry (due to scarring and/or desmogenous contracture and/or paralysis); facial expression of feelings is not altered
6b		Absence or dental caries of up to two teeth (from one to four)
7a		Deficiency of all or certain eyelid tissues, barely visible
10a		Deficiency of all or certain earlobe tissues from 1cm ² to 1/4 of helix
10b		Partial loss of the lobule
11a		Elevated and/or depressed and/or relief scalp scar (with or without alopecia or contracture) 2–4cm ²
12a		Linear scalp and/or ear scar (at the level of the surrounding skin or not), overall length 2–4cm
12b		Linear scalp and/or ear scar (at the level of the surrounding skin or not), overall length 4cm-10cm
13a		Elevated and/or depressed and/or relief hand scar (with or without contracture) 1/4-1/2 TBSA
14a		Multiple benign lesions present on a hand (acne/smallpox scars, skin diseases and tumors) 2cm ² -1/4TBSA
15e		Elevated and/or depressed and/or relief neck scar without contracture, total coverage 2- 4cm ²
16a		Multiple benign lesions present on the neck (acne/smallpox scars, skin diseases and tumors) 2-4cm ²
17a		Linear neck scar (at the level of the surrounding skin or not), overall length 2- 4cm
18a		Linear hand scar (at the level of the surrounding skin or not), overall length 2-4 cm
18b		Linear scar on both hands (lateral, at the level of the surrounding skin or not), overall length 4-10 cm

19b	Slight gait and posture deviation due to contractures in large joints, limping, involuntary movements or palsy
20f	Amputation of one (any) hand phalanx, thumb excluded
21a	Amputation of one (any) foot phalanx
21b	Amputation of one toe, big toe excluded
23a	Elevated and/or depressed and/or relief forearm and/or lower leg and/or foot scar with or without contracture 8-16 cm ²
24a	Multiple benign lesions present on a forearm and/or lower leg and/or foot (acne scars, smallpox scars, skin diseases and tumors) 8- 16 cm ²
25a	Linear forearm and/or lower leg and/or foot scar (at the level of the surrounding skin or not), overall length 4- 8 cm
26a	Elevated/depressed/relief torso and/or upper arm and/or upper leg scar (with or without contracture) 2.5- 5 % TBSA
27a	Multiple benign lesions present on the torso and/or upper arm and/or upper leg (acne/smallpox scars, skin diseases and tumors) 2.5- 5 % TBSA
28a	Linear torso and/or upper arm and/or upper leg scar (at the level of the surrounding skin or not), overall length 8- 16 cm
29a	Breast asymmetry, hardly visible
29b	Breast asymmetry, slightly visible
29c	Breast asymmetry, clearly visible
31a	Linear or relief breast scar, hardly visible
31b	Linear or relief breast scar, slightly visible
32b	Asymmetry of male and female genital organs, clearly visible
32c	Distinct asymmetry of male and female genital organs
32d	Striking asymmetry of male and female genital organs
34a	Lack, loss of 2cm ² - ¼ of vulva
35a	Elevated and/or depressed, relief scar of female or male genital covering the surface area of 2 cm ² - ¼ of genital organs
35b	Elevated and/or depressed, relief scar of female or male genital covering the surface area of ¼ - ½ of genital organs
35c	Elevated and/or depressed, relief scar of female or male genital covering the surface area of more than ½ of genital organs
35d	Elevated and/or depressed and/or relief hand scar (with or without contracture) 2 cm ² -¼TBSA
37g	Elevated and/or depressed scar of nasal dorsum and sidewalls covering the surface area of 0-3mm ²
37e	Lack of a part of the lip 0-3mm ²

MEDIUM DISFIGUREMENT (2); n = 56	
Code	Description of disfigurement
1c	Blindness (referring to the appearance of a blind person, to the eye function)
2c	Linear face and/or forehead scar (at the level of the surrounding skin or not), overall length 5-10 cm
3b	Multiple benign lesions present on the face and/or forehead (acne/smallpox scars and/or skin diseases and/or tumors) 2-16 cm ²
4b	Elevated and/or depressed and/or relief face and/or forehead scar (without contracture) 1-16 cm ²
5b	Clearly visible facial asymmetry (due to scarring and/or desmogenous contracture and/or paralysis) and/or slightly distinct ectropion; facial expression of feelings is not altered
6c	Absence or dental caries of on up to three teeth (from one to four)
6d	Absence or dental caries of on six to eight front teeth
6e	Absence or dental caries of on more than eight front teeth
7b	Deficiency of all or certain eyelid tissues, up to 1/3 of a lid
7c	Deficiency of all or certain eyelid tissues, 1/3-1/2 of a lid
8a	Elevated and/or depressed nose scar, covering 0.5-1cm ² of nasal dorsum and sidewalls
9a	Lack of a part or the entire lip fullness 5 mm ² - 1/4usne
9b	Lack of a part or the entire lip fullness 1/4 -1/3
10c	Deficiency of all or certain earlobe tissues 1/4 - 1/3
10d	Loss of the lobule, more than ½
10e	Deficiency of all or certain earlobe tissues 1/3-1/2
11b	Elevated and/or depressed and/or relief scalp and/or ear scar (with or without alopecia or contracture) od 4 cm ² -1% TBSA
12c	Linear scalp scar (at the level of the surrounding skin or not), overall length 10-20cm
13b	Elevated and/or depressed and/or relief hand scar (with or without contracture) 1/2% -1% TBSA.
14b	Multiple benign lesions present on hands (acne/smallpox scars, skin diseases and tumors) 1/4-1/2 TBSA
14c	Multiple benign lesions present on hands (acne/smallpox scars, skin diseases and tumors) 1/2% -1% TBSA
15f	Elevated and/or depressed and/or relief neck scar without contracture, total coverage 4cm ² -0.5% TBSA
15g	Elevated and/or depressed and/or relief neck scar without contracture, total coverage 0.5-1% TBSA
15i	Elevated and/or depressed and/or relief neck scar with contracture, total coverage 2-4cm ²
16b	Multiple benign lesions present on the neck (e.g. acne/smallpox scars, skin diseases and tumors) 4cm ² -0.5% TBSA
17b	Linear neck scar (at the level of the surrounding skin or not), overall length 4-10 cm
17c	Linear neck scar (at the level of the surrounding skin or not), overall length 10-20 cm
18c	Linear scar of both hands (lateral, at the level of the surrounding skin or not), overall length 10-20 cm
19c	Obvious gait and posture deviation due to contractures in large joints, limping, involuntary movements or palsy
20g	Amputation of two (any) hand phalanges, thumb excluded
20h	Loss of one finger, thumb excluded
20k	Loss of one thumb phalanx

21c	Loss of two toes
21d	Loss of two to five toes
21f	Amputation of a big toe
23b	Elevated and/or depressed and/or relief forearm and/or lower leg and/or foot scar with or without contracture, 16 cm ² -5% TBSA
24b	Multiple benign lesions present on a forearm and/or lower leg and/or foot (acne scars, smallpox scars, skin diseases and tumors) 16 cm ² - 5% TBSA
24c	Multiple benign lesions present on a forearm and/or lower leg and/or foot (acne scars, smallpox scars, skin diseases and tumors) 5% - 15% TBSA
25b	Linear forearm and/or lower leg and/or foot scar (at the level of the surrounding skin or not), overall length 8-20 cm
25c	Linear forearm and/or lower leg and/or foot scar (at the level of the surrounding skin or not), overall length 20-100 cm
26b	Elevated and/or depressed and/or relief torso and/or upper arm and/or upper leg scar (with or without contracture) 5-10 % TBSA
27b	Multiple benign lesions present on the torso and/or upper arm and/or upper leg (acne/smallpox scars, skin diseases and tumors) 5 -10 % TBSA
27c	Multiple benign lesions present on the torso and/or upper arm and/or upper leg (acne/smallpox scars, skin diseases and tumors) 10-40 % TBSA
28b	Linear torso and/or upper arm and/or upper leg scar (at the level of the surrounding skin or not), overall length 16- 40 cm
28c	Linear torso and/or upper arm and/or upper leg scar (at the level of the surrounding skin or not), overall length 40-100 cm
29d	Distinct breast asymmetry
29e	Striking breast asymmetry
30a	Lack of up to ¼ of a breast
30b	Lack of up to ¼ - ½ of a breast
31c	Linear or relief breast scar, overall length up to 10cm
31d	Linear or relief breast scar, overall length 10-30cm
31e	Linear or relief breast scar, overall length more than 30 cm
33a	Lack, loss of more than ½ or the whole of glans penis
33d	Lack, loss of one testicle
37f	Lack of a part of the lip 3-5 mm ²
37h	Elevated and/or depressed nose scar, covering 3-5 mm ² of nasal dorsum and sidewalls

LARGE DISFIGUREMENT (3); n = 53

Code	Description of disfigurement
1b	Clearly visible strabismus
2d	Linear face and/or forehead scar (at the level of the surrounding skin or not), overall length 10-15 cm
2e	Linear face and/or forehead scar (at the level of the surrounding skin or not), overall length more than 15 cm
3c	Multiple benign lesions present on the face and/or forehead (acne scars and/or smallpox scars and/or skin diseases and/or tumors) 16 cm ² -2% TBSA
3d	Multiple benign lesions present on the face and/or forehead (acne scars and/or smallpox scars and/or skin diseases and/or tumors) 2% TBSA or more
4c	Elevated and/or depressed and/or relief face and/or forehead scar (without contracture) 16 cm ² -2% TBSA
5c	A distinct facial asymmetry (due to scarring and/or desmogenous contracture and/or paralysis, e.g. central facial palsy) and/or distinct ectropion; altered facial expression of feelings
7d	Deficiency of all or certain eyelid tissues, more than 1/2
8b	Elevated and/or depressed nose scar, covering up to ¼ of nasal dorsum and sidewalls
8c	Elevated and/or depressed nose scar, covering 1/4 -1/2 of nasal dorsum and sidewalls
8d	Elevated and/or depressed nose scar or amputation of the whole nasal dorsum and sidewalls
8e	Nasal tip amputation and/or ala of the nose and/or columella
9c	Lack of a part or the entire lip fullness 1/3 -1/2
9d	Lack of more than ½ of lip fullness
11c	Elevated and/or depressed and/or relief scalp and/or scar (with or without alopecia or contracture) 1 -2% TBSA
11d	Elevated and/or depressed and/or relief scalp and/or scar (with or without alopecia or contracture) 2% -3%
12d	Linear scalp scar (at the level of the surrounding skin or not), overall length 20-30cm
12e	Linear scalp and ear scar (at the level of the surrounding skin or not), overall length more than 30cm
13c	Elevated and/or depressed and/or relief hand scar (with or without contracture) 1% -2% TBSA.
13d	Elevated and/or depressed and/or relief hand scar (with or without contracture) more than 2% TBSA.
14d	Multiple benign lesions present on hands (acne/smallpox scars, skin diseases and tumors) 1% -2% TBSA
14e	Multiple benign lesions present on hands (acne/smallpox scars, skin diseases and tumors) more than 2% TBSA
15h	Elevated and/or depressed and/or relief neck scar without contracture, total coverage 1%-2% TBSA
15j	Elevated and/or depressed and/or relief neck scar with contracture, total coverage 4cm ² -0.5% TBSA
15k	Elevated and/or depressed and/or relief neck scar with contracture, total coverage 0.5-1% TBSA
16c	Multiple benign lesions present on the neck (acne/smallpox scars, skin diseases and tumors) 0.5%-1%TBSA
16d	Multiple benign lesions present on the neck (acne/smallpox scars, skin diseases and tumors) 1-2%TBSA
17d	Linear neck scar (at the level of the surrounding skin or not), overall length 20-30 cm
17e	Linear neck scar (at the level of the surrounding skin or not), overall length more than 30cm
18d	Linear scar of one or both hands (at the level of the surrounding skin or not), overall length 20-30cm
18e	Linear scar of both hands (at the level of the surrounding skin or not), overall length more than 30cm
19d	Asymmetry of the body, large gait and posture deviation due to contractures in large joints, limping, involuntary movements or palsy, aids mandatory

20i	Loss of two or more fingers, thumb excluded
20j	Loss of a part of a hand, thumb excluded
20l	Loss of two thumb phalanges
20m	Loss of the whole thumb (with the metacarpal bone)
21e	Amputation of a part of a foot
23c	Elevated and/or depressed and/or relief forearm and/or lower leg and/or foot scar with or without contracture 5% - 15% TBSA
23d	Elevated and/or depressed and/or relief forearm and/or lower leg and/or foot scar with or without contracture 15% - 25% TBSA
24d	Multiple benign lesions present on a forearm and/or lower leg and/or foot (acne scars, smallpox scars, skin diseases and tumors) 15%- 25% TBSA
24e	Multiple benign lesions present on a forearm and/or lower leg and/or foot (acne scars, smallpox scars, skin diseases and tumors) more than 25% TBSA
25d	Linear forearm and/or lower leg and/or foot scar (at the level of the surrounding skin or not), overall length 100 cm-150cm
25e	Linear forearm and/or lower leg and/or foot scar (at the level of the surrounding skin or not), overall length more than 150cm
26c	Elevated and/or depressed and/or relief torso and/or upper arm and/or upper leg scar (with or without contracture)10-40 % TBSA
26d	Elevated and/or depressed and/or relief torso and/or upper arm and/or upper leg scar (with or without contracture)40-50 % TBSA
26e	Elevated and/or depressed and/or relief torso and/or upper arm and/or upper leg scar (with or without contracture) more than 50% TBSA
27d	Multiple benign lesions present on the torso and/or upper arm and/or upper leg (acne/smallpox scars, skin diseases and tumors) 40-50 % TBSA
27e	Multiple benign lesions present on the torso and/or upper arm and/or upper leg (acne/smallpox scars, skin diseases and tumors) more than 50 % TBSA
28d	Linear torso and/or upper arm and/or upper leg scar (at the level of the surrounding skin or not), overall length 100-200 cm
28e	Linear torso and/or upper arm and/or upper leg scar (at the level of the surrounding skin or not), overall length more than 200 cm
33b	Amputation of up to 1/2 of penis
33e	Loss of both testicles
34b	Amputation of 1/4 - 1/2 of vulva

VERY LARGE DISFIGUREMENT (4); n = 31	
Code	Description of disfigurement
1e	Loss of an eye, eyelids preserved
1f	Loss of the eye socket contents with the eyelid and surrounding structure.
4d	Elevated and/or depressed and/or relief face and/or forehead scar (without contracture) more than 2% TBSA
5d	Striking facial asymmetry due to scarring and/or desmogenous contracture and/or paralysis, and/or distinct ectropion, highly altered facial expression of feelings, bizzare facial expression.
8f	Amputation of more than one half of the nose or the whole nose
8g	Amputation, lack of the nose with the surrounding structure
9e	Lack of the entire upper or lower lip
9f	Lack of the entire or major part of the upper jaw (maxilla)
9g	Lack of the entire or major part of the lower jaw (mandible)
10f	Deficiency of all or certain earlobe tissues more than 1/2
10g	Amputacija cele usneskoljkesaokolinom
11e	Elevated and/or depressed and/or relief scalp and/or scar (with or without alopecia or contracture) more than 3%
15l	Elevated and/or depressed and/or relief neck scar with contracture, total coverage 1-2% TBSA
19e	Asymmetry of the body, large gait and posture deviation due to contractures in large joints, limping, involuntary movements or palsy, bizzare body appearance
20d	Loss of two or more fingers with the thumb
20n	Amputation of a part of a hand with the thumb
22a	Lack (amputation) of one arm below the elbow
22b	Lack (amputation) of one arm above the elbow
22c	Lack (amputation) of one arm at the shoulder
22d	Lack (amputation) of one leg below the knee
22e	Lack (amputation) of one leg above the knee
22f	Lack (amputation) of one leg at the hip
22g	Lack (amputation) of both legs at any level
22h	Lack (amputation) of both arms at any level
22i	Lack (amputation) of any two limbs at any level
22j	Lack (amputation) of more than two limbs at any level
23e	Elevated and/or depressed and/or relief forearm and/or lower leg and/or foot scar with or without contracture more than 25% TBSA
30c	Amputation of the whole breast
30d	Amputation of both breasts
33c	Loss of more than 1/2 of penis or a complete amputation
34c	Lack of more than 1/2 of vulva or a complete loss.