

特重烧伤浸浴诱发败血症死亡的教训

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浸浴疗法常被认为可应用于治疗中、小面积烧伤及烧伤后期创面的清洗。国内应用于特重烧伤病人六十年代即有报告(1,2)。国外近年来亦有早期应用于治疗严重烧伤的报告(3)。我院将浸浴做为大面积深度烧伤的一种治疗方法。它对加速烧伤创面的愈合及防止败血症或创面脓毒症的发生等均起到积极而有效的作用。一般地说,病人浸浴后虽然可以出现发烧、寒战、虚脱、电介质紊乱、毒血症、菌血症等浸浴后反应,经临床治疗均可得到纠正。但需要特别指出的是,浸浴疗法如若使用不当也可以诱发败血症或创面脓毒症而致严重后果。本文将对特重烧伤浸浴后诱发败血症死亡的典型病例做一介绍并略加讨论。

临床资料和方法

我院自1973~1982年十年中对全部的特重烧伤病人、大部份的重度烧伤病人均予以实施浸浴疗法,共计164人。十年中烧伤死亡者55例,其中29例(占52.8%)死于烧伤败血症或创面脓毒症(4)。29例中有4例(占13.8%)是由于掌握浸浴时机不当使病人在全身浸浴后诱发败血症而死亡,占总浸浴者的2.4%。本文选择其中三例典型者介绍并讨论。三例均为特重烧伤患者,总面积均在90%以上,三度面积最小者30%,最大者85%。

浸浴疗法所使用的浴盆为软塑料制成,可以折叠,长190cm、宽55cm、高45cm。病人入盆仰卧后将塑料浴盆固定于翻身床或一般病床上,用0.9~1.0%盐水为浸浴液,浸浴液温度为38~39℃,加至完全浸没病人躯体为止,浸浴液总量大约为60,000毫升左右。

病人首次浸浴时间一般在伤后二周左右,

在浴盆内浸浴约30分钟以内,以后根据需要每周二次,每次浸浴时间视病情,一般在30~60分钟。浸浴过程中可以剪除部份痂皮或坏死组织。浸浴后也可以立即行自体皮移植术。

典型病例

例1,孙××男 25岁 该患于1978.9.17被汽油烧伤后33小时入院。烧伤总面积90%,三度面积30%,伴有呼吸道烧伤。三度创面主要分布于双上肢,其余三度创面散在。入院后休克期渡过基本平稳。伤后4天因呼吸困难行气管切开术。伤后10天在静脉氯胺酮麻醉下行双上肢切痂、大张异体皮移植、自体皮嵌入术。切痂面积13%。

伤后17天,22天分别行第一、二次全身浸浴。伤后第26天行第三次全身浸浴同时取头皮植入双上肢及肩部的裸露创面。第三次浸浴后病人出现弛张热、呼吸变快32~40次/分,并有精神萎靡、反应迟钝、谵语、四肢颤动、昏迷等精神症状,以及腹胀、肠鸣音减弱、呕吐、柏油便等消化道症状。血色素为5.2克,白细胞8500。伤后28天血培养为产碱杆菌。经治疗于伤后30天败血症得以有效控制。神志已转清楚,腹胀明显减轻,创面已变干燥。于伤后第31天又给病人行第四次全身浸浴,浸浴后病情再次迅速恶化,神志恍惚,谵语、幻视、呼吸增快至40次/分;体温由39.5℃逐渐下降、不升;创面皮片不见扩展,易出血,白细胞降至3800,虽经多方抢救无效于伤后37天死亡。

例2,尹××女 6岁 该患于1982.1.20因玩火致柴草着火烧伤。伤后26小时入院。烧伤总面积90%,其中三度85%,伴有呼吸道轻度烧伤。伤后第二天因呼吸急促行胸腹部“U”

形焦痂切开减压术。伤后第三天在静脉氯胺酮麻醉下行胸腹壁及双下肢三度焦痂切除大张异体皮移植及自体皮嵌入术。切痂面积约46%，头皮供皮约3%。于伤后第13天行第二次切痂术，切除背部及右上肢焦痂约15%，同时移植大张异体皮，术后2天嵌入自体皮。伤后15天病情平稳，停用抗菌素。

伤后20天因异体皮开始脱落行第一次浸浴。伤后24、27天分别行第二、第三次浸浴，浸浴后体温升高、精神不振、食欲减少；创面异体皮排斥、崩溃、自体皮跟不上覆盖、裸露创面较多。于伤后30天行第四次浸浴及自体皮移植术。浸浴后病情迅速恶化，体温不升，神志恍惚、不清至昏迷，逐渐出现腹胀，无尿，心率降至56次/分，间歇性呼吸，创面渗血不止虽经尽力抢救无效于伤后32天死亡。

例3，吴××男 29岁 该患于1982.7.1因汽油烧伤后2小时入院。烧伤总面积98%，其中三度面积70%。休克期渡过不顺利。伤后4天BUN:35毫克%。伤后8天病人出现烦躁不宁，狂叫不止，创面回吸收差，软组织水肿，蜂窝组织炎严重，阴囊肿大光亮如球。伤后11天出现喷射性呕吐，呕吐频繁，吐出胆汁。经抗感染等综合措施处理后，上述症状得以缓解，病情明显稳定。于伤后15天在氯胺酮复合麻醉下行左下肢、前胸切痂、大张异体皮移植、自体皮嵌入术。切痂面积25%。

于伤后27~40天共全身浸浴四次。第四次浸浴前创面有局灶性绿色脓苔，细菌培养为绿脓杆菌。浸浴后绿色迅速扩展至全部创面，背部出现出血性坏死斑，同时伴有神志恍惚、谵语、肌肉震颤、提睾反射消失，体温由39.8℃渐降至35.9℃，白细胞4400，中性粒细胞中98%有中毒颗粒及空泡。A/G=1.8/1.7，小便量逐日增多，每日达700~9950毫升，比重固定在1.010。经调整抗菌素及其他积极治疗措施至伤后49天病情得以缓解。病人神志清楚，能吃流质饮食，创面变干燥，体温36.7℃，白细胞升至7600。于伤后51天上午给病人第五次全身浸浴及取头皮游离植皮术，下午病人就出现

体温不升，神志不清，创面又迅速变绿色，有强直性抽搐，呼吸循环衰竭，抢救无效于伤后52天死亡。

讨 论

烧伤深度创面为坏死组织，直接与外界接触，极易引起感染，是各种细菌迅速繁殖的场所，为细菌侵入血流的感染源地，是导致烧伤败血症死亡的根本原因。

浸浴疗法是处理烧伤创面的一种有效措施，若使用得当它可以及时地清洗掉烧伤创面上大量的脓液、分泌物及坏死组织，从而大大减少创面上细菌及其毒素的含量。同时，它也可以促进创面的血液循环有利于上皮的修复和生长。从这方面来说，浸浴疗法对败血症或创面脓毒症有积极的预防和治疗作用。

但是，由于浸浴所需的水温为38~39℃，一般高于体温，因此浸浴中或浸浴后可以使机体周围循环的血管扩张，加之在浸浴过程中大面积深度创面的渗血和出血，使创面和浸浴液中的细菌或毒素极易侵入血流。例2就是在病情重，裸露创面多的情况下，不适当的使用了浸浴疗法使细菌乘机侵入机体，感染迅速扩散而诱发败血症死亡的。

本组四例死亡病例，为单纯浸浴或浸浴植皮手术后诱发败血症而死亡，均与浸浴有关。单纯浸浴诱发败血症死亡者2例（例1及未做典型介绍者）；浸浴加植皮手术诱发败血症死亡者2例（例2、例3）。后者所指植皮手术是在浸浴之后相对清洁的肉芽创面上即刻植入自体皮片，手术在病房内局部麻醉下进行，自体皮一般一次切取1—2%左右。由于手术本身范围较小，使用局麻且勿需搬动病人，手术中病人的供皮区可能有不同程度的渗血，但这种手术远远不像大面积切痂手术那样可以对病人构成生命威胁。当然，任何手术都是创伤，对于特重烧伤后体质虚弱而且有的已伴有严重感染的病人来说都是一次打击。例2、例3可以认为主要是由于不适时机的浸浴加上植皮手术刺激使感染迅速扩散诱发败血症死亡。

实施浸浴疗法，特别强调要严格掌握浸浴时机。例1、例3本来在第三、第四次浸浴后已经患有产硷杆菌败血症和绿脓杆菌创面脓毒症，经积极地进行综合治疗均使感染得到控制，病情已大见好转，但此时机体抵抗力已明显下降，全身状况极度衰弱，在这种情况下本应继续进行抗感染和支持疗法，尽量减少对病人的刺激和打击，但却分别于病情好转的第一天和第二天又采取了浸浴和浸浴植皮疗法，这种不合时机的浸浴措施，致迅速诱发重复败血症而死亡。

根据以上情况，我们有如下几点认识：

(1)特重烧伤病人浸浴疗法应在伤后二周左右开始。

(2)为予防毒血症和败血症的发生、浸浴前后给予广谱抗菌素是必要的。

(3)应在病人全身情况较好，抵抗力较强，病情较稳定时进行全身浸浴。

(4)较衰弱、病情重、败血症初见好转者应严格掌握浸浴时机。

(5)败血症发生者不宜行浸浴。

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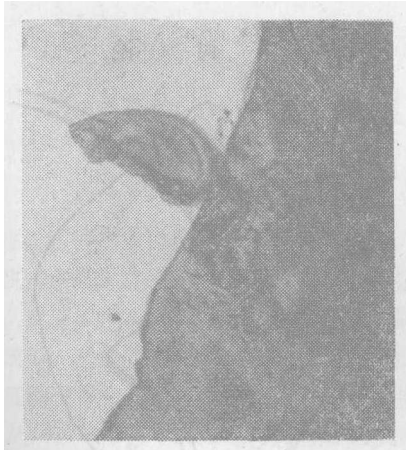
撕脱耳廓再植成活一例报告

鞍山市第三医院 颌面整形组 罗庆会 王素梅 高卫国

病例报告：男性，57岁，于1985年6月19日右耳廓撕脱伤后四小时来诊，检查仅耳轮与颞部间有1cm长，0.5cm宽、0.7mm厚的皮肤相连，及1.5×1cm的耳垂存留。创面污染较重，耳后动脉、颞浅动脉分支全部断离。经清创后，将断离软骨固定，软组织间断缝合，术后应用抗生素，三周后创口完全愈合，撕脱耳廓大

部分存活。两个月后感觉逐渐恢复，颜色接近正常，仅耳垂上部遗有一小三角形缺损（见图）。

讨论：当处理外伤性耳廓撕脱伤时，如尚以一部分皮肤相连或完全撕脱，只要撕脱耳廓结构比较完整，精心再植后都可能存活，如仅有部分存活，亦有利于日后的耳廓再造。



附图 术前



附图 术后

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tively in the proximal region of the forearm with microsurgical techniques. The results are successful.

**The Clinical Use of A New Type of Bathtub with
Whirlpool for Burn Patient**
Ai Yu-feng et al
*Department of Plastic and Burns, Xijing Hospital,
Fourth Military Medical College*

Through 19 cases of clinical application with new model whirlpool bathtub, we found this kind of whirlpool may clean the wounds, accelerate debriding the necrotic tissues, and control infection, therefore lower down the morbidity rate of septicemia. Of course, it makes the patient feels better than ordinary changing dressing. It could cut down the time for medical care of the wound surface. The indications of the application are: 1. Late stage of deep degree burn and granulation. 2. Preparation of the wound for the skin grafting. 3. Residual wounds of the late stage of burn and for functional exercise. It is easy to manage by lifting apparatus. The bathtub can be sterilized by fumigation. Through the study of 130 specimens of bacterial count and culture, we found the surface bacterial count would degrade the count 91.3%. On 2nd degree burn the count would decrease 86.9%. And the granulation wound would 57.8%. This treatment would shorten half of the time in handling the wound.

**Development of Septicemia in Severely Burned Patients
Due to Improper Use of Bathing Treatment**
Wang De-chang, et al.
Shandong Provincial Hospital, Jinan

The Hubbard tank is a very useful equipment for treating patients with extensive burn injuries. However, when used improperly, it can lead to the spreading of infection and development of septicemia.

Three cases who had been improperly treated with Hubbard tank therapy are presented and discussed. The general rules of proper tank usage are as follows:

- 1) For severely burned patients, the tank should be used for the first time at about two weeks after injury.
- 2) Broad spectrum antibiotics should be given to the patient before and after bathing treatment.
- 3) If possible, the patient should receive tank treatment when he is in relatively good condition.
- 4) Great care must be taken when treating extremely weak patients and for those who have recently recovered from septicemia.
- 5) The tank should never be used for patients whose condition is critical or

in septic state.

**Correction of Hemifacial Atrophy with Transplantation of
a Dermis-fat Flap by Microvascular Anastomoses
Report of 5 Cases**

Gao Jian-hua et al.

Nan Fang Hospital, First Military Medical College

We have successfully performed 5 transplantations of dermis-fat flap by microvascular anastomoses to correct hemifacial atrophy since 1981. The results are satisfactory.

The dermis-fat flaps were taken from forearm, scapular area, middle and upper lateral areas of upper arm, and anterior lateral area of thigh, respectively. The maximum size of flap is $15 \times 8 \text{ cm}^2$, the minimum is $6 \times 9 \text{ cm}^2$.

The main advantages of this method for correcting the hemifacial atrophy are that the buried tissues are plasticized easily and will not be absorbed with permanent outline, and have no foreign body reaction,

Furthermore, part of the epidermis may be retained on the flap for some patients with severe hemifacial atrophy, in order to solve the problem of deficient or very thin skin.

**Lymphatic-venous Sleeve Anastomosis and
its Clinical Application**

Xie Xing-bin

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Hospital, First Medical College of P.L.A. Guangzhou*

Lymphatic-venous end-to-end anastomosis is very difficult, its operation time is long, which hinders the clinical application at present.

We have treated 13 cases of lymphatic edema of the lower limb by lymphatic-venous sleeve anastomosis since 1979, and have had follow-up study for 1—6 years. There is an obvious reduction in the volume, circumference and relapse of cellulitis of the edematous limb.

1. Lymphatic-venous sleeve anastomosis is that the lymphatics are sleeved into the venules. The venule has many valves, its blood pressure is lower than the lymphatic pressure. Thrombosis is not easily formed at the anastomosis site.

2. Lymphatic-venous sleeve anastomosis is easy and operation time is short.

3. When lymph space is not visible, lymphatic with an external diameter below 0.3 mm, or lymphatic with an external diameter which is much smaller than that of venule, lymphatic-venous end-to-end anastomosis is usually hard to perform, but sleeve anastomosis may be used.