皮膚上的瘀青和拔罐後印記的比較

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皮膚表面上的傷痕，產生原因概略有兩種：1. 外來撞擊力，如不能控制的跌倒、碰撞等；和 2. 自主允許外力所給予的 傷害，如打針、拔罐等。由於兩者對人體皮下的器官、組織及血管等破裂出血的傷害程度不同，皮膚表面上所產生的痕跡也不同，但是各有其特性，可以用肉眼分辨。重大開放性傷口，應速送醫療機構處理，本文僅比較可以觀察皮表痕跡的變化。

一、外來撞擊力下皮膚表面的印記

在非開放性傷口中，皮膚表面上會呈現受傷印記，一般是非本人蓄意所為，在跌、打、碰撞時皮下組織及血管破裂出血的傷痕。例如：(1) 腿部遭受外力打擊，呈現血管破裂的大範圍瘀青斑點，如圖一。[1](2) 小腿遭受小範圍器械鈍傷的瘀青斑點，如圖二。(3) 手臂受傷內出血後誤用抗凝血劑造成嚴重大範圍的瘀血，如圖三。其瘀血程度於十天後仍未消褪，如圖四。

以上三例均是由外力引起皮下組織及血管破裂出血的傷害，其在皮膚表面上所產生的痕跡，可以用肉眼去辨別其發生的原因和嚴重度，這些由意外外力引起皮下組織及血管破裂出血的傷害，一般病患本人不能主導控制。而拔罐後的印記，卻是人為蓄意在皮膚表面上，使用負壓 造成皮下組織或血管破裂所產生出血的傷害印記。

二、拔罐後皮膚表面上的印記

拔罐是在主觀允許之下，人為蓄意的在皮膚表面上進行對人體負壓作用。由於負壓對人體器官、組織、血管的傷害作用明確，其可能造成的傷害是可以預知的，所以可以由拔罐後皮膚表面上的印記來判讀發生的原因和嚴重度。幸好拔罐是局部小範圍，除了操作技術失誤外，影響拔罐對組織及血管造成傷害有限，通常很少有即時重大的影響，卻也因此而被受忽略。

拔罐對器官、組織及血管造成的傷害，正如拔罐的機制是將器官、組織及血管中發炎的成分吸引移出病灶的位置，以方便組織快速的修護和更新，亦即關係到拔罐的安全性和有效性。所以，拔罐主要的成功因素，即是罐內負壓數值的決定，和拔罐的部位，前者代表在不傷害人體的程度內，儘可能移除代謝廢物，而後者代表在正確的位置上，有效的移除代謝廢物，而不傷害臨近正常的組織。這是因為人體各個部位對負壓的耐受度差異甚大，所造成的傷害影響不同，影響吸取能力，因此，有必要利用可以用肉眼分辨的拔罐後印記，來討論和比較

[1] 本文圖一至圖十五置於頁 3-5。

此兩因素所代表的意義。

（一）罐內負壓的數值大小

人體各個部位對負壓的耐受度不同，根據實驗其最高負壓數值保障安全性，最低負壓數值維持其有效性，在此範圍中，可以因個人身體條件作必要的微調(謝麗貞，知音出版社，2018)。

（二）拔罐位置的選擇

為有效移除病灶中的代謝廢物而不傷害臨近正常的組織，必需要在正確有病的區域中進行拔罐，可以最大吸取出病變的組織液來由健康表皮協助快速代謝。因此拔罐之前必需要瞭解病變給予正確的診斷，再依次找出正確的人體解剖位置，然後進行拔罐，確保有效吸取出病變成分而不傷害臨近正常的組織。

雖然在安全且有效的負壓數值範圍下，在正確病灶位置上拔罐，然後去比較所得的拔罐後印記才有意義。不過目前通用的拔罐器材設備，大多沒有負壓值的控制，也沒有對病變給予正確診斷以決定病灶的位置，多使用經絡的俞穴或用阿是穴來拔罐，因此當作拔罐後印記的比較基礎絕對存在偏差。但是在不同條件下能得到的拔罐後印記的影像，仍舊可以給予我們相當多的信息。

使用市面上最通用的抽氣式拔罐器，在腹部肚臍上方的中脘穴上拔罐。實驗者為健康年輕的男性，儘其力抽取出罐內空氣形成負壓(真正負壓值無法測量)，所得的拔罐後印記，如圖五：影像顯現如罐口大小的圓形，其中布滿紅色斑點。這些斑點正好是皮膚的毛細孔的位置，也就是毛細孔微血管破裂出血的現象，其原因可能是壓力過大造成傷害。換句話說，拔罐作用的位置並未深入體的器官或組織，而是作用在表皮。

使用可控制壓力的「瞬吸可調式吸引力拔罐裝置」(謝麗貞，知音出版社，2017。)(張美意等，新醫學雜誌，2018)，實驗者為健康年輕的男性，一樣在腹部肚臍上方的中脘穴上拔罐，所得的拔罐後印記，如圖六：影像顯現如罐口大小的圓形，有明顯的紅色邊緣，其中呈淡淡的紅色，並沒有毛細孔微血管破裂出血的現象，因為罐內負壓值控制在安全範圍內，不會造成壓力過大的傷害。而且罐印中間平常無異狀。

穴道代表人體內的器官及組織在體表的出口，不但可以顯現該器官或組織的健康狀況，也是操控出入口，左右器官及組織的修護、調節和生殖。利用穴道在拔罐前偵測病變的狀況和病灶的位置，再加以調控其對器官及組織的影響方向，可以促進修護的功能。由於拔罐只是一種將病變的組織液吸取出來，以利健康的表皮協助快速代謝恢復正常，所以拔罐前給予穴壓不但用來確認病灶的位置，還能夠使拔罐後的印記顯現出肉眼可以評估的活體圖像，方便作為診斷、治療、預後和追蹤的依據。

穴壓對拔罐的影響可以用以下兩張示意圖說明。

圖七表示輕症之「氣—穴道—組織—拔罐關係示意圖」，繪出拔罐時的剖面相。罐內中心的最高點是穴壓點，其下組織成分因為拔罐時負壓吸力而凸上，將病變的組織液吸取出至表皮來；其所呈現的皮膚的顏色隨健康狀

況由淡至深色—健康良好者印記顏色略紅，很快即恢復原本之健康膚色，如圖八；稍有輕症者其印記顏色較紅，需 1 天左右可恢復至原本之健康膚色，如圖九。

圖十表示重症之「氣—穴道—組織—拔罐關係示意圖」，繪出拔罐時的剖面相及病變的組織成分被集中吸取出至表皮穴道口來的情況。其印記所呈現的皮膚顏色隨組織病變的成分和嚴重程度，由深、濃以及不同皮表的斑點或色塊至更深、濃的顏色 (謝麗貞，知音出版社，2018)。印記顏色共分 1 至 5 級(陳秀熙等，2019)。

肩背傷害者拔罐後印記之比較

經穴壓治療及使用「瞬吸可調式吸引力拔罐裝置」之車禍重度肩背傷害者拔罐後的印記，如圖十四。

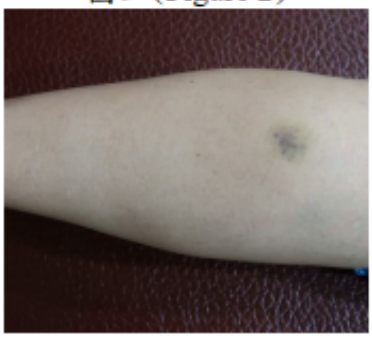
使用傳統抽氣式拔罐器之過度運動肩背傷害者拔罐後陳舊的印記，無法測量罐內負壓值，拔罐部位估計採用疼痛點，如圖十五。

結論

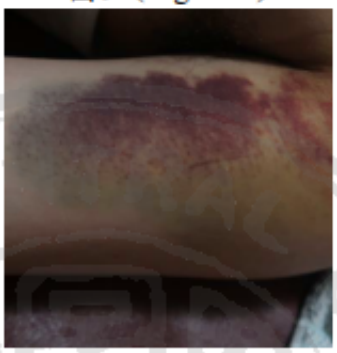
皮膚上及拔罐印記的比較，必需在相同的基礎條件下所形成的才有意義。本文所比較的是在使用「傳統抽氣式拔罐器」或「瞬吸可調式吸引力拔罐裝置」兩種器材之下，討論其印記的的差異，同時也比較其罐內負壓值和拔罐的位置的決定，因為這兩個因素正好關係到拔罐的安全性和有效性。

圖一(Figure 1)

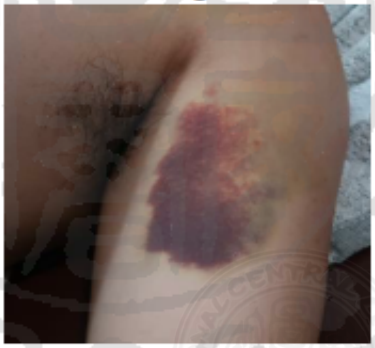
圖二(Figure 2)



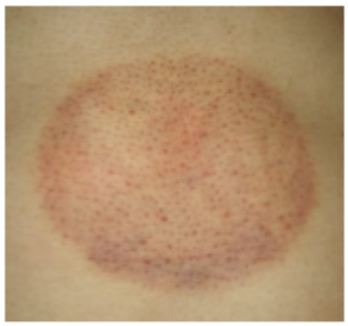
圖三(Figure 3)



圖四(Figure 4)



圖五(Figure 5)



圖六(Figure 6)

圖七(Figure 7)

說明：輕症之「氣—穴道—組織—拔罐關係示意圖」
(Mild case "diagram of Qi-Acupoint-Tissue-Cupping Relation-ship")

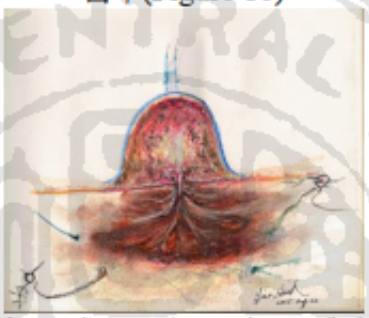
圖八(Figure 8)

說明：健康良好者中脫之印記
(The mark of the healthy person)

圖九(Figure 9)

說明：健康略遜者中脫之印記
(The Mark of the less healthy person)

圖十(Figure 10)

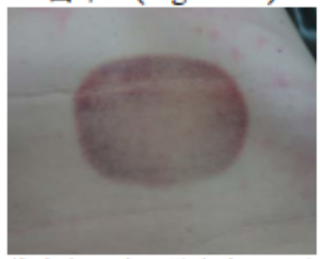


說明：重症之氣—穴道—組織—拔罐關係示意圖
(Severe case "diagram of Qi-Acupoint-Tissue-Relationship")

圖十一(Figure 11)

說明：組織病變中重度者中脘之印記
(The mark of sacrifice of moderate to severe tissue lesions)

圖十二(Figure 12)



說明：陳舊重度組織病變者中脘之印記
(The mark of 中脘 in old severe tissue lesions)

圖十三(Figure 13)

說明：新發生重度組織病變者之印記
(The marks of newly severe tissue lesions)

圖十四(Figure 14)

說明：經穴壓治療及使用「瞬吸可調式吸引力拔罐裝置」之車禍重度肩背傷害者拔罐後的印記
(After cupping imprint of a severe shoulder and back injuries in a car accident.)

圖十五(Figure 15)

說明：使用傳統抽氣式拔罐器之過度運動肩背傷害者拔罐後陳舊的印記，無法測量罐內負壓值，拔罐部位估計採用疼痛點。
(It shows excessive marks on the shoulder of an over-worked shoulder-wound injured person using a traditional suction cupping device whose in-cup negative pressure value can not be measured. The pain point is estimated and used as the cupping position.)

Comparison of bruising on the skin and imprinting after cupping

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There are two possible causes of scars on the skin surface: 1. External impact forces, such as uncontrollable falls and collisions; and 2. Injuries from external forces, such as injections, cupping, etc. Because the two have different degrees of damage to the rupture and bleeding of subcutaneous organs, tissues, and blood vessels, the traces on the surface of the skin are also different, but each has its own characteristics and can be distinguished with the naked eye. Major open wounds should be sent to a medical institution for treatment. This article only compares the changes in the skin surface traces.

I. The imprint of the skin surface under external impact

In non-open wounds, marks of injury appear on the surface of the skin. Generally, it is a mark that is not intentionally made by the person. The subcutaneous tissue and blood vessels rupture and bleed when they fall, hit, or collide. For example: (1) The leg was hit by an external force, showing a large range of bruises with ruptured blood vessels, as shown in Figure 1 ; [1] (2) Bruise spots on the calf suffered a small-scale instrument blunt injury, as shown in Figure 2 ; (3) Misuse of anticoagulant caused severe bleeding in the arm after bleeding inside the arm, as shown in Figure 3. The degree of stasis did not fade after ten days, as shown in Figure 4.

The above three cases are caused by external force caused by subcutaneous tissue and blood vessel rupture and bleeding. The traces on the skin surface can be identified by the naked eye with the cause and severity. These accidental external forces caused subcutaneous tissue and blood vessel rupture. The bleeding injury cannot be controlled by the patient. However, the imprint after cupping is an artificial imprint on the surface of the skin. The use of negative pressure to cause bleeding from subcutaneous tissue or blood vessel rupture.

II Imprints on the surface of the skin after cupping

Cupping is subject to the subjective permission, and artificially carries out negative pressure on the human body on the surface of the skin. Since the negative pressure has a clear damage to human organs, tissues and blood vessels, the possible damage can be predicted, so the cause and severity of the occurrence

[1] Figure 1 to Figure 15 of this article are on pp. 3-5.

can be judged by the imprint on the skin surface after cupping. Fortunately, cupping is a small area, except technical errors, cupping has limited damage to tissues and blood vessels and few immediate and significant impacts, yet they are ignored.

The damage caused by cupping to organs, tissues and blood vessels is just as the mechanism of cupping is to attract the inflammatory components in organs, tissues and blood vessels out of the location of the lesion to facilitate the rapid repair and renewal of the tissue, which is related to the safety and effectiveness of cupping. Therefore, the main success factor of cupping is the determination of the negative pressure value in the cup and the place to be cupped. The former represents the removal of metabolic waste as much as possible without harming the human body, and the latter represents being in the correct position that effectively removes metabolic waste without harming adjacent normal tissue. This is because various parts of the human body have very different tolerances to negative pressure, and the damage caused by them is different, which affects the absorption capacity. Therefore, the post-cupping mark can be distinguished with the naked eye for discussion and comparison the meaning of these two factors.

First, the value of the negative pressure in the cup

Different parts of the human body have different tolerances to negative pressure. According to the experiment, the highest negative pressure value guarantees safety, and the lowest negative pressure value maintains its effectiveness. In this range, the necessary fine adjustments can be made according to individual physical conditions (Hsieh Li-Chen, Jiyin Press, 2011).

Second, Selection of cupping position

In order to effectively remove the metabolic waste in the lesion without damaging adjacent normal tissues, it is necessary to perform cupping in the correct diseased area, and the diseased tissue fluid can be sucked out to the maximum for rapid metabolism assisted by the healthy epidermis. Therefore, it is necessary to understand the lesion and give a correct diagnosis before cupping, and then find out the correct anatomy position of the human body in turn, and then perform cupping to ensure that the lesion components are effectively sucked out without damaging adjacent normal tissues.

In a safe and effective range of negative pressure values, cupping at the correct lesion location, and then comparing the resulting cupping marks makes sense. However, most of the current cupping equipment and device do not control the negative pressure value, and do not give a correct diagnosis of the lesion to determine the right location of the lesion. There is absolutely a deviation in the basis of comparison. But the images after cupping can be obtained under different conditions can still give us a lot of information.

The use the most common cupping device on the market, cupping on the middle acupoint above the belly button acupoint, (中脘穴). The experimenter was a healthy young male, and did his best to extract the air in the cup to form a negative pressure (the true negative pressure value cannot be measured). The

resulting cupping mark is shown in Figure 5, full of red spots. These spots are exactly the position of the pores of the skin, which is the phenomenon of rupture and bleeding of the capillary blood vessels, which may be caused by excessive pressure and causing injury. In other words, the cupping effect does not go deep into the body's organs or tissues, but acts on the epidermis.

The use of pressure-controllable "instantaneously adjustable suction cupping device" (Hsieh Li-Chen, Jiyin Press, 2011)、(Zhang Meiyi et al., New Medical Journal, 2018) on also above the belly button acupoint of a healthy young male, the resulting imprint after cupping is shown in Figure 6. The image appears as large as the cup size, with obvious red edges, which is pale red, and there is no rupture of capillary micro-vessels and bleeding, because the negative pressure value in the cup is controlled within a safe range, which will not cause excessive pressure injury and there is usually no abnormality in the middle of the pot printing.

Influence of Acupressure before Cupping on Imprint after Cupping

Acupoints represent organs and tissues in surface of the body. Not only can they show the health of the organs or tissues, they also control the entrance and exit, and control the repair, regulation and reproduction of organs and tissues. The use of acupressure on points to detect the condition of the lesion and the location of the lesion before cupping, and then to adjust the direction of its influence on organs and tissues when repair. Because cupping is only a way to suck out the diseased tissue fluid to help the healthy epidermis to assist the rapid metabolism to return to normal, giving acupressure before cupping can not only confirm the location of the lesion, but also make the marks after cupping show a living body that can be evaluated by the naked eye. The images can be used as a basis for diagnosis, treatment, prognosis and tracking.

The effect of acupressure on cupping can be illustrated with the following two diagrams.

Figure 7 shows the diagram of "qi-acupoint-tissue-cupping relationship" for mild cases. The highest point in the center of the cup is the point of acupressure, and the underlying tissue components are convex due to the negative pressure suction when cupping, and the diseased tissue fluid is sucked out to the epidermis. The color of the skin presented varies from light to dark according to the health condition. The color of the mark of the healthy person is slightly red, and the original healthy skin color will be restored soon, as shown in Figure 8; the color of the mark of the milder person will be red, and it will take about 1 day t o restore the original healthy skin color, as shown in Figure 9.

Figure 10 shows the diagram of "qi-acupoint-tissue-cupping relationship" for severe cases, which depicts the cross-section phase and the tissue components of the lesion when they are drawn out to the epidermal acupoint exit during cupping. The skin color presented by its imprints varies from deep, thick, and spots or patches on different skin surfaces to deeper, thicker colors depending on the composition and severity of tissue lesions (Hsieh Li-Chen, Jiyin

Press, 2017). The color of the stamp is divided into 1 to 5 grades (Chen Hsiu Hsi et al., 2019). Figure 11 shows the mark of sacrifice of moderate to severe tissue lesions ; Figure 12 shows the mark of 中脘 in old severe tissue lesions while Figure 13 shows marks of newly severe tissue lesions.

Comparison of After Cupping Imprints on Shoulders and Back Injuries

Figure 14 shows marks after cupping for those with severe shoulder and back injuries in a car accident using acupressure therapy and the "instant suction adjustable attractive cupping device" for cupping.

Figure 15 shows excessive marks on the shoulder of an over-worked shoulder-wound injured person using a traditional suction cupping device whose in-cup negative pressure value can not be measured. The pain point is estimated and used as the cupping position.

Conclusion

Comparisons on the skin and cupping marks must be made under the same basic conditions to be meaningful. This article compares the difference between the imprint and the cupping negative pressure and cupping using two types of equipment: "conventional suction cupping device" or "instantaneously adjustable suction cupping device", since the negative in-cup pressure and the location for cupping are just related to the safety and effectiveness of cupping.