

Reviewer #1:

1. Authors should add setbacks encountered during this study and how they were dealt with.

We encountered some difficulties to stabilize the scaphoid to the lunate and I add this part to in the treatment part: As most of the stabilizers of the scaphoid were injured, the scaphoid had become extremely unstable, so it was difficult to stabilize the scaphoid to the lunate in a proper position.

2. Limitations of this study should be mentioned and elaborated in the discussion

Limitations: There are some limitations to this study. First, as a case report, only 1 patient was diagnosed and treated, so there were no group comparisons of other treatment options. Second, the follow-up period was short. As we did not repair the scapholunate interosseous ligament directly during the operation, whether the ligament was healed or just scar-connected was unknown. Further observation is necessary.

Reviewer #2:

1. The radiographs show that there are some chip fractures of the capitate and hamate as well as dislocations in the scaphoid, but the images are not very clear. Has computed tomography or fluoroscopic image been used to confirm this explanation? (Before treatment and after treatment)

I have added a CT scan in the Figure 1 that showed the chip fractures of the capitate and hamate before the treatment.

2. Based on the following reference, if there is a complete rupture in the ligament between the scaphoid bone and the lunate, this injury will be classified as Grade 4. (Geissler, W. B. (2013). Arthroscopic management of scapholunate instability. *Journal of wrist surgery*, 2(02), 129-135.) However, the manuscript states that this ligament between the scaphoid bone and the lunate is intact, but this injury is classified as Grade 4. Please explain about Geissler grade (grade III, II, I, IV) injuries and what is the basis of your classification?

| Grade | Description | Management |
|-------|---|---|
| I | Attenuation/hemorrhage of interosseous ligament as seen from the radiocarpal joint. No incongruency of carpal alignment in the midcarpal space. | Immobilization |
| II | Attenuation/hemorrhage of interosseous ligament as seen from the radiocarpal joint. Incongruency/step-off as seen from midcarpal space. A slight gap (less than width of a probe) between carpals may be present. | Arthroscopic reduction and pinning |
| III | Incongruency/step-off of carpal alignment is seen in both the radiocarpal and midcarpal spaces. The probe may be passed through the gap between carpals. | Arthroscopic/open reduction and pinning |
| IV | Incongruency/step-off of carpal alignment is seen in both the radiocarpal and midcarpal spaces. Gross instability with manipulation is noted. A 2.7-mm arthroscope may be passed through the gap between carpals. | Open reduction and repair |

The arthroscopy confirmed a complete tear of the radioscapophcapitate (RSC) ligament and scapholunate interosseous ligament(the ligament between the scaphoid and lunate) and the arthroscope can pass through the scapholunate gap obviously. So the Gessiler classification was IV. The lunotriquetral interosseous ligament was intact but it had no influence of the Geissler classification.

3. It is mentioned that the DASH and PRWE scores were 16 and 10, respectively. What is the basis for evaluating and determining these scores? What is the normal range of these scores?

2. DASH 上肢功能评分表

请根据上 1 周内您的活动情况，在以下项目相应等级 (1-5) 的数字上画圈。并请务必回答以下每个问题。如果在上周没有机会从事某项活动，请圈 5。那个项目与您的上肢功能状况最相符合，并在相应等级的数字上画圈。请您注意：不管您是用哪只手完成的下列活动，也不管您是如何完成的，只要根据您的能力回答问题。

A 部分：请您评估在上 1 周内，进行下列活动的的能力，并在相应等级的数字上画圈，见表 1。

表 1 A 部分内容

| 项目 | 活动能力 | | | | |
|--------------------------------|------|------|------|-----|----|
| | 无困难 | 有点困难 | 明显困难 | 很困难 | 不能 |
| 1. 拧开以拧紧的或新的玻璃瓶盖 | 1 | 2 | 3 | 4 | 5 |
| 2. 写字 | 1 | 2 | 3 | 4 | 5 |
| 3. 用钥匙开门 | 1 | 2 | 3 | 4 | 5 |
| 4. 准备饭菜 | 1 | 2 | 3 | 4 | 5 |
| 5. 推开一扇大门 | 1 | 2 | 3 | 4 | 5 |
| 6. 将物品放到头部上方的小柜子里 | 1 | 2 | 3 | 4 | 5 |
| 7. 繁重的家务劳动 (擦地板、洗刷等) | 1 | 2 | 3 | 4 | 5 |
| 8. 花园及孩子的劳动 (打扫卫生、松土、割草修建花草树木) | 1 | 2 | 3 | 4 | 5 |
| 9. 铺床 | 1 | 2 | 3 | 4 | 5 |
| 10. 拎购物袋或文件箱 | 1 | 2 | 3 | 4 | 5 |
| 11. 搬运重物 (超过 5kg) | 1 | 2 | 3 | 4 | 5 |
| 12. 更换头部上方的灯泡 | 1 | 2 | 3 | 4 | 5 |
| 13. 洗双或吹干头发 | 1 | 2 | 3 | 4 | 5 |
| 14. 擦洗背部 | 1 | 2 | 3 | 4 | 5 |
| 15. 穿毛衣 | 1 | 2 | 3 | 4 | 5 |
| 16. 用刀切食品 | 1 | 2 | 3 | 4 | 5 |
| 17. 轻度体力的业余活动 (打牌、织毛衣等) | 1 | 2 | 3 | 4 | 5 |

25. 使用臂部力量或冲击力的业余活动 (使用锤子、打高尔夫球、网球等)

19. 灵活使用臂部的业余活动 (如羽毛球、垒球、飞盘)

20. 驾驶乘坐交通工具

21. 无

22. 影响您同家人、朋友、邻居以及其他人群社会交往的程度

23. 影响您的工作或其他日常活动的程度

B 部分：请您评估在上 1 周下列症状的严重程度，在相应等级的数字上画圈，见表 2。

表 2 B 部分内容

| 项目 | 症状严重程度 | | | | |
|-----------------------------|--------|----|----|----|---|
| | 无 | 轻度 | 中度 | 极度 | |
| 24. 休息时肩、臂或手部疼痛 | 1 | 2 | 3 | 4 | 5 |
| 25. 活动时肩、臂或手部疼痛 | 1 | 2 | 3 | 4 | 5 |
| 26. 肩、臂或手部麻木、针刺样疼痛 | 1 | 2 | 3 | 4 | 5 |
| 27. 肩、臂或手部无力 | 1 | 2 | 3 | 4 | 5 |
| 28. 肩、臂或手部僵硬 | 1 | 2 | 3 | 4 | 5 |
| 29. 肩、臂或手部疼痛对睡眠的影响 | 1 | 2 | 3 | 4 | 5 |
| 30. 肩、臂或手部功能障碍使您感到能力下降、缺乏自信 | 1 | 2 | 3 | 4 | 5 |

DASH 值为 0 分表示上肢功能完全正常，为 100 分表示上肢功能极限。DASH 值 = (A、B 两部分分值总和) - 30 (最低值) ÷ 1.20

总分: _____

| | No difficulty | Mild difficulty | Moderate difficulty | Severe difficulty | Unable |
|---|---------------|-----------------|---------------------|-------------------|--------|
| 1. Opening a tight or new jar | 0 | 0 | 0 | 0 | 0 |
| 2. Writing | 0 | 0 | 0 | 0 | 0 |
| 3. Turning a key | 0 | 0 | 0 | 0 | 0 |
| 4. Preparing a meal | 0 | 0 | 0 | 0 | 0 |
| 5. Pushing open a heavy door | 0 | 0 | 0 | 0 | 0 |
| 6. Placing an object on a shelf above your head | 0 | 0 | 0 | 0 | 0 |
| 7. Doing heavy household chores | 0 | 0 | 0 | 0 | 0 |
| 8. Gardening or doing yard work | 0 | 0 | 0 | 0 | 0 |
| 9. Making a bed | 0 | 0 | 0 | 0 | 0 |
| 10. Carrying a shopping bag or briefcase | 0 | 0 | 0 | 0 | 0 |
| 11. Carrying a heavy object (over 10 lbs) | 0 | 0 | 0 | 0 | 0 |
| 12. Changing a light bulb overhead | 0 | 0 | 0 | 0 | 0 |
| 13. Washing or blow-drying your hair | 0 | 0 | 0 | 0 | 0 |
| 14. Washing your back | 0 | 0 | 0 | 0 | 0 |
| 15. Putting on a pullover sweater | 0 | 0 | 0 | 0 | 0 |
| 16. Using a knife to cut food | 0 | 0 | 0 | 0 | 0 |
| 17. Recreational activities that require little effort (card playing, knitting, etc.) | 0 | 0 | 0 | 0 | 0 |
| 18. Recreational activities in which you take some force or impact through your arm, shoulder, or hand (golf, tennis, etc.) | 0 | 0 | 0 | 0 | 0 |

Please rate your ability to do the following activities in the last week:

| | No difficulty | Mild difficulty | Moderate difficulty | Severe difficulty | Unable |
|--|---------------|------------------|---------------------|-------------------|---------|
| 19. Recreational activities in which you move your arm freely (badminton, fishing, etc.) | 0 | 0 | 0 | 0 | 0 |
| 20. Manage transportation needs (getting from one place to another) | 0 | 0 | 0 | 0 | 0 |
| 21. Sexual activities | 0 | 0 | 0 | 0 | 0 |
| 22. During the past week, to what extent has your arm, shoulder, or hand problem interfered with your normal social activities with family, friends, neighbors, or groups? | Not at all | Slight | Moderate | A lot | Extreme |
| 23. During the past week, were you limited in your work or other regular daily activities as a result of your arm, shoulder, or hand problem? | Not limited | Slightly limited | Moderate limited | Very limited | Unable |

Please rate the severity of the following symptoms in the last week:

| | None | Mild | Moderate | Severe | Extreme |
|--|-------------------|-----------------|---------------------------|-------------------|----------------|
| 24. Arm shoulder or hand pain | 0 | 0 | 0 | 0 | 0 |
| 25. Arm, shoulder or hand pain when you performed any specific activity | 0 | 0 | 0 | 0 | 0 |
| 26. Tingling (pins and needles) in your arm, shoulder or hand | 0 | 0 | 0 | 0 | 0 |
| 27. Weakness in your arm, shoulder or hand | 0 | 0 | 0 | 0 | 0 |
| 28. Stiffness in your arm, shoulder or hand | 0 | 0 | 0 | 0 | 0 |
| 29. During the past week, how much difficulty have you had sleeping because of the pain in your arm, shoulder or hand? | No difficulty | Mild difficulty | Moderate difficulty | Severe difficulty | I can't sleep |
| 30. I feel less capable, less confident, or less useful because of my arm, shoulder or hand problem | Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |

DASH score

The DASH score ranges from 0-100, 0 means normal function of the upper extremity, 100 means extreme limit of function.

4. The content presented in the discussion section is very large and therefore it is very difficult to understand and compare these explanations. And I think it would be more useful to present this material in a series of tables. I have added some tables in the manuscript and rearrange the frame of the manuscript.