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Letter to the Editor

Risk of shoulder dislocation in skydiving



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1. Introduction

The incidence rate of shoulder dislocation is 23.9 per 100 000 person-years according to a large study done in the United States ($n = 8940$).¹ Approximately 48.3% of shoulder dislocation injuries occur during sports or recreation in the same study. Shoulder dislocation and subluxation occur frequently in athletes, with peaks in the second and sixth decades.² Shoulder instability is a contraindication for skydiving due to the high risk of dislocation.³ There are two risky stages where skydivers can get shoulder dislocation: (1) during free-fall and (2) during parachute deployment. It is dangerous to have a shoulder dislocation in mid-air as pain secondary from the dislocation can affect effective brain functioning, or worse, leading to death during a skydiving exercise.⁴

1.1. Background of skydiving and relevance to general practitioner

To become a member of the British Parachute Association (BPA), skydiver is required to sign a membership agreement.

According to sentence four of the membership agreement produced by BPA, it states that “I fully understand and freely acknowledge that sport parachuting is inherently dangerous. [...] I voluntarily accept all the risk inherent in the sport [...]”.⁵ This statement will undoubtedly include the risk of shoulder dislocation that should be borne by the BPA member.

A lot of skydivers are doing the activity as a “once-off” experience rather than doing it frequently as professionals. These are the people who may come to ask for “advice” from general practitioners whether they are safe to undertake skydiving with a shoulder problem – that is student tandem parachutist. Student tandem parachutists are required by BPA to sign a Declaration of Fitness. To the interest of general practitioner, in this declaration, if a parachutist has had a dislocated shoulder, then the parachutist must obtain medical approval. By certifying the parachutist to skydive, the general practitioner is confirming that “history or appropriate clinical examination have not suggested unacceptable medical risk factors [...] the applicant is physically and mentally capable of parachuting as a tandem student and is medically safe to do so.”³ Under Notes for Doctors of the same document, it also

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specifically states that “Unstable or dislocatable shoulders are particularly likely to dislocate again while parachuting.”³

Therefore, general practitioners have to determine (1) whether the patient is safe to skydive with a history of shoulder dislocation and (2) whether the patient is safe to skydive if she/he has a shoulder operation to prevent future shoulder dislocation.

2. Aim

The purpose of writing this article is to provide some insight on what advice general practitioners can give to patients with shoulder problems when they want to participate in skydiving.

3. Discussion

Young patients with shoulder dislocation are at high risk of recurrence and early surgical intervention is advocated.⁶ A literature search on the current published database did not reveal any guidelines to direct general practitioners on what advice should/could be given to patients regarding the risk of shoulder dislocation post-shoulder operation. In an article written by Westman, he had an open Bankart's operation and had about 700 jumps post-operatively before having a shoulder dislocation in mid-air.⁴ Statistically, this generates a 0.001% chance of having a shoulder dislocation after Bankart's operation. In a case report published by Chan et al.,⁷ capsular shift operation was done with the objective to prevent future recurrent shoulder dislocation and the results were satisfactory without further dislocation. More importantly, the patient in their case report went for tandem skydiving five years after the surgery and he did not have any shoulder dislocation. Both Westman and Chan were supportive of the low risk of shoulder dislocation in tandem skydiving post-shoulder surgery. It appears that patients with recurrent shoulder dislocation repaired by capsular shift operation are probably safe to undertake tandem skydiving activity.

4. Conclusions

In summary, shoulder dislocation is a risk during skydiving activity. General practitioners should advise against skydiving

activity if patients have recurrent shoulder dislocation. However from the current available evidence, if patients have had operations to reduce shoulder dislocation, general practitioners may advise patients that it is safe for them to undertake tandem skydiving. Nevertheless, the timing to undertake skydiving activity postoperatively is less certain although Chan et al.⁷ suggested that five years after surgery has no shoulder dislocation from tandem skydiving.

Conflict of interest

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