Prevalence of de Quervain's Tenosynovitisin Buffalo Milkers

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Abstract

Background: Buffalo milkers are more prone to de Quervain's tenosynovitis due to their working process and repeated use of thumb, wrist and fingers. If there is any pain or problem in hand or wrist can have impact on milking ability which can lead to change in their economic status and quality of life. There are only few studies done on the population of buffalo milkers and problems regarding their occupation. Thus this study is designed to find prevalence of de quervain's tenosynovitis in buffalo milkers.

Aim: The aim of this study was to find out prevalence of de Quervain's tenosynovitis in buffalo milkers and aware them about this condition to avoid further damage.

Material and Method: Study was conducted with 92 subjects in and around Karad. Subjects were selected as per inclusion and exclusion criteria and consent was taken. Both males(43) and females(49) subjects were included for study. Then they were assessed with help of Finkelstein test and Visual analogue scale the data was collected and analysed accordingly.

Stastical Analysis: The simple random sampling is used to select the subjects for study and it is conducted in and around Karad Taluka. The sample size was calculated by de quervain's tenosynovitis taken at 64%. Hence for calculation of sample size p=64% and q=100-p=36% sample size $n=4pq/L^2$ therefore n=92. Statistical analysis of the recorded data was done by using the software instat. MS Excel was used for drawing various graphs with given frequencies and the various percentages that were calculated with the software.

Result: After analyzing the data, it was found that there is a prevalence of de Quervain's tenosynovitis. In all participants 43% people have de Quervain's tenosynovitis. It is found that prevalence of de Quervain's tenosynovitis is more in females than males and pain distribution is more in age group of 41 to 45years.

Conclusion: The prevalence of de Quervain's tenosynovitis is more in females and precautions should be taken by buffalo milkers by modifying their work strategies to avoid further damage.

Keywords: *De Quervain's tenosynovitis, Buffalo milkers, abductor policis longus, extensor policies brevis tendons.*

Introduction

De Quervain's Tenosynovities is a disease in which there is pain and swelling over the radial styloid process. There is inflammation of common sheath of abductor policis longus and extensor policies brevis tendons.[1] The origin of abductor policis longus is ulna, radius, interosseous membrane and the action of it is abdution and extention of thumb, the origin of extensor policis brevis is radius and interosseous membrane and the action of extensor policis brevis is extension of thumb.[2]

There is tenderness over radial styloid process takes place.[1]Adducting the thumb across palm and forcing ulnar deviation causes aggravation of pain. The pain

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causes due to thickening of bfibrous sheath. The pain radiates proximal or distal from the first dorsal wrist compartment [1,2]

The confirmation of De Quervain's Tenosynovitis is done by positive findings on finkelstain test. In this test, ask the patient to place his thumb in the palm of the hand and flex the digits around the thumb, if there is tenderness over the first dorsal wrist compartment then the test is positive[3,4]

De Quervain's Tenosynovitis is associated with occupations which include over use of wrist and thumb. It is also associated with repeatative trauma.[5]

Buffalo milking is done by using hand. Because of hard teat sphincter muscle and their slow milk ejection reflex buffaloes are slow and hard milkers.[6] In hand milking there is massaging and pulling down on the teats of the udder and collecting the milk in bucket takes place. It includes two methods:

1. Between the finger and thumb, the top of teat is pinched and shut to trap milk in the lower part and squeeze by other fingers, the milk will come out through the tip of teat

2. By the finger and thumb, the top of the teat is pinching then slid down the teat to push milk towards the bottom.[7]

In buffalo milkers there is repeatative use of thumb and fingers associated with wrist takes place. de Quervain's disease is a significant cause of musculoskeletal pain among people.[7,8]

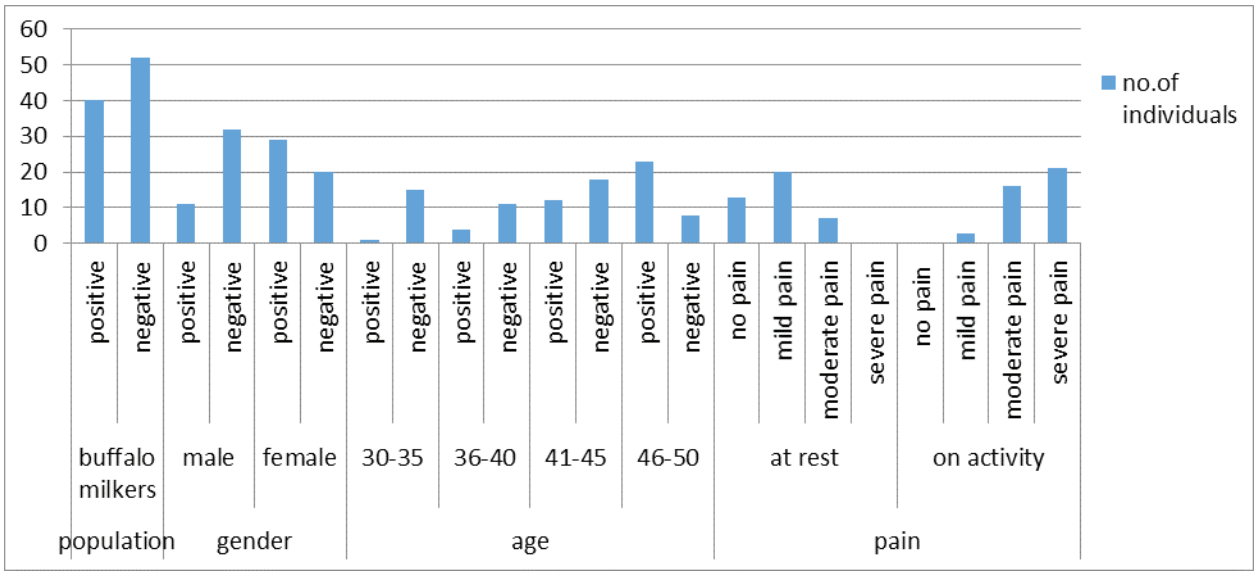
Methodology

This study is cross sectional study undertaken to find out prevalence of de Quervain's tenosynovitis in buffalo milkers and to create awareness about it in them. Buffalo milkers with age group of 30 to 50, both males and females were included. Buffalo milkers who have already undergone from fingers and wrist related surgery and those who are unwilling to participate are excluded. Written consent of the patient was taken. The study is ethically approved. The Finkelstein test and Visual analogue scale is used as study tool.

Statistical Analysis

The sample size was calculated by de quervain's tenosynovitis taken at 64%(as a study has shown as frequency of dequervain's tenosynovitis and its association with SMS texting is 64% as in SMS texting there is also repeated thumb movements takes place therefore 64% was taken into consideration for dequervain's tenosynovitis . Hence for calculation of sample size p=64% and q=100-p=36% sample size $n=4pq/L^2$ therefore n=92.The simple random sampling is used to select the subjects for study and it is conducted in and around Karad Taluka.

A. Graph 1:



Interpretation: According to the graph above 11(27 %) of males and 32(73%)of females have

dequervain's tenosynovitis. It also shows that 23 of buffalo milkers had dequervains tenosynovitis in age group 46-50 yrs.in 41-45yrs 12 subjects, in 36-40yrs 4subjects and in 30-35yrs 1of buffalo milkers had dequervain's tenosynovitis and at rest, 20(50%) people had mild pain, 7(18%)people had moderate pain, 13(32%)people with no pain and on activity 21(53%) of people had severe pain,16(40%) people had moderate pain and 3(7%)had mild pain.

Based on this study it was found that heel pain in farmers is statistically significant ($p< 0.0001$).

Discussion

The aim was to study the prevalence of dequervain's tenosynovitis in buffalo milkers. Inclusion criteria was, Buffalo milkers both males and females. Age group of 30-50 years and Participants those are willing to participate. Exclusion criteria was Buffalo milkers who have already undergone surgery of wrist and fingers.

The study was conducted with 92 subjects in and around Karad. Subjects were selected according to the inclusion and exclusion criteria. Both male (43) and Female (49) subjects were included for the study. Subjects were explained about the procedure of the study. Written consent was taken from them and they were also asked if they suffered any other musculoskeletal problems. Then they were assessed with finkelstein test and visual analogue scale, survey was done according to the results obtained and hence the conclusion was given.

Buffalo milking is second most important way to earn money in farmers. Buffalo milking is done bby using hand in which over use of wrist thumb and fingers takes place which causes pain swelling over radial styloid process. Inflammation can cause reduction in workability and impact on daily living activities.

Many studies have been conducted on De quervain's tenosynovitis in another population like students, nursing staff etc.

As per the previous studies it has been seen that personal and work related factors were associated with de quervain's tenosynovitis in working population in which there is bending and twisting movement of wrist takes place.

Previous studies are carried out to see risk factors of de quervain's tenosynovitis in French working population by Audrey Petit Le Menac'h**,** the purpose of this study was to assess the relative importance of personal and occupational risk factors for de quervains tenosynovitis in working population.

So in buffalo milkers de quervain's tenosynovitis can cause due to repetitive thumb movement and bending movement, that's why it is necessary to find prevalence of de quervain's tenosynovitis in buffalo milkers.

Even this study helped to create awareness amongst buffalo milkers about the de quervain's tenosynovitis and its risk factors that might cause pain which would eventually affect their work. And benefit for betterment of them and help them to prevent further problems or injuries to surrounding structures.

In this study we came to know that females are primarily affected by this condition. De quervain's tenosynovitis was also found statistically significant in present study. It was shown that 43% subjects are having de quervain's tenosynovitis and 46-50 years of age group is mostly.

Conclusion

After analysing the data, it was found that there is a prevalence of de quervain's tenosynovitis in buffalo milkers. 43% of subjects are having de quervain's tenosynovitis. It is found that prevalence of de Quervain's tenosynovitis is more in females than males and pain distribution is more in age group of 41 to 45years.

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Conflict of Interest: There were no conflict of interest in my study

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Ethical Clearance: The institutional committee has hereby given permission to initiate the research project titled, "Prevalence of de Quervain's tenosynovitis in buffalo milkers."

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