HEMODIALYSIS PUNCTURE STRESS RELIEF THROUGH BUTTONHOLE METHOD

Kazuhiko Shibata1, Takahiro Shinzato2, Hidehisa Satta3, Tadashi Kuji3, Seiichi Kawata3, Naoaki Koguchi3, Masahiro Nishihara4, Tomoko Kaneda4, Shigeki Toma5,
1Yokohama Minami Clinic, Internal Medicine, Yokohama, JAPAN, 2Daiko Medical Engineering Research Institute, Internal Medicine, 3Yokodai Central Clinic, 4Toshin Clinic, 5Toma Naika Clinic.

yokohama minami clinic
朋進会 横浜南クリニック

Correspondence: k.shibata@houshinkai.or.jp

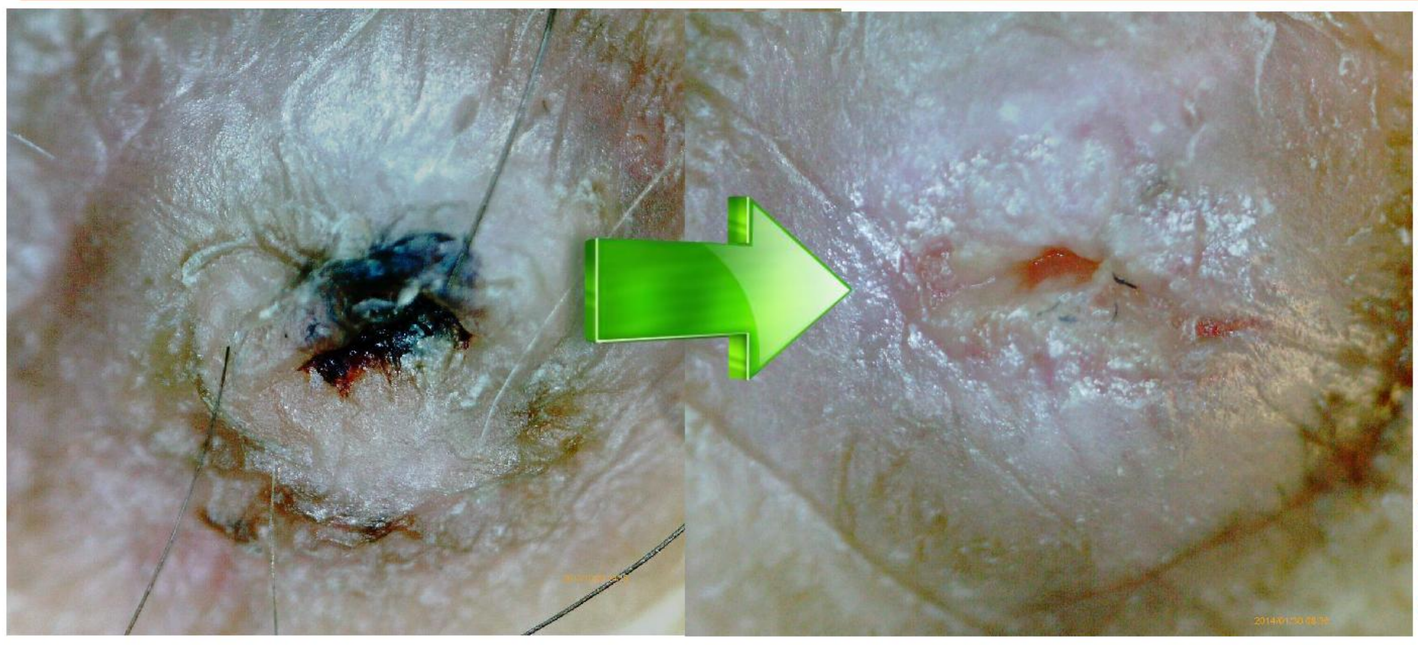
INTRODUCTION

Pain caused by AVF puncturing seems be reduced by switching from the conventional puncture method (i.e., rope-ladder method) to the buttonhole method. However, it is difficult to provide objective evidence of this because pain is a subjective symptom and its intensity cannot be quantified. Due to this reason, we attempted to estimate pain intensity by evaluating stress levels quantitatively at the time of buttonhole puncturing. This was done on the basis that pain is always accompanied by stress. Furthermore, in this report buttonhole puncturing was performed when the buttonhole entry site was treated by the moist wound healing method in order to eliminate stress caused by scab removal

METHOD

A significant correlation has been reported between the VAS pain scale and elevation of salivary α-amylase levels, suggesting that salivary α-amylase levels may be an objective index for pain intensity. Moreover, it is known that salivary Chromogranin-A (CgA) level, which is thought to reflect catecholamine levels, may be another marker of mental stress. Thus, in this report, we evaluated mental stress and strain caused by puncture pain by analyzing these two stress markers.

Out of 160 patients on hemodialysis in Yokohama Minami Clinic, 42 were punctured using only the buttonhole method with treatment of buttonhole entry sites by the moist wound healing method. In these patients, we measured saliva stress marker chromograninA and salivary amylase before and five minutes after the puncture was made.> In all cases, 16G dull needles manufactured by Asahi Kasei Medical Co.,Ltd. were used.



Buttonhole aperture becomes cleaner by using moist wound treatment.

Number of patients	42
Men	31
Women	11
Mean age	69.1±10.7(Y)
Duration of Dialysis	101.7±66.3(M)
Kt/V	1.52±0.18
n-PCR	0.90±0.19
Chronic glomerulonephritis	13
NIDDM	15
IgA nephropathy	3
Nephrosclerosis	6
Polycystic kidney disease	2
Others	3

Table1.Background of patients

RESULTS

In regards to Chromogranin-A, there was no significant difference between pre- and postpuncture level (p=0. 99). The results were also similar in the case of salivary amylase, where the levels changed from 368.0±298.2 to 353.9±259.5 (p=0. 82). In terms of salivary amylase, there was also no significant difference between pre- and postpuncture levels (p=0. 82).

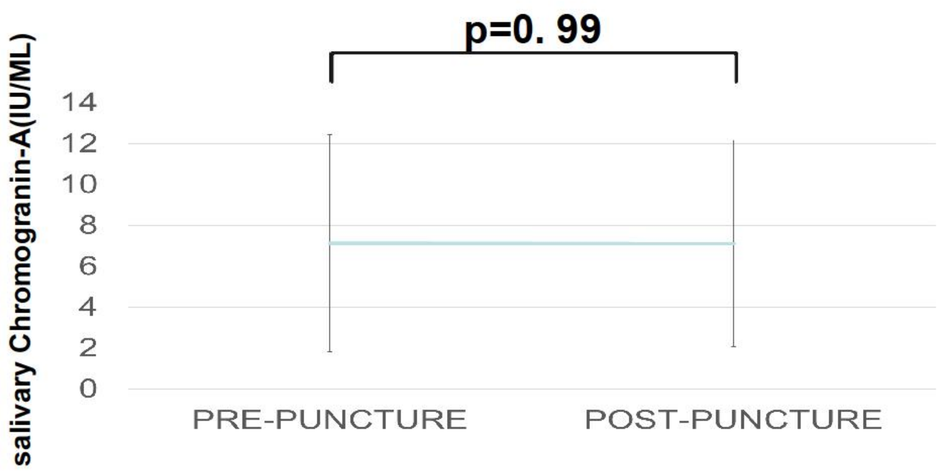


Figure 1. Levels of salivary Chromogranin-A before and after the puncture

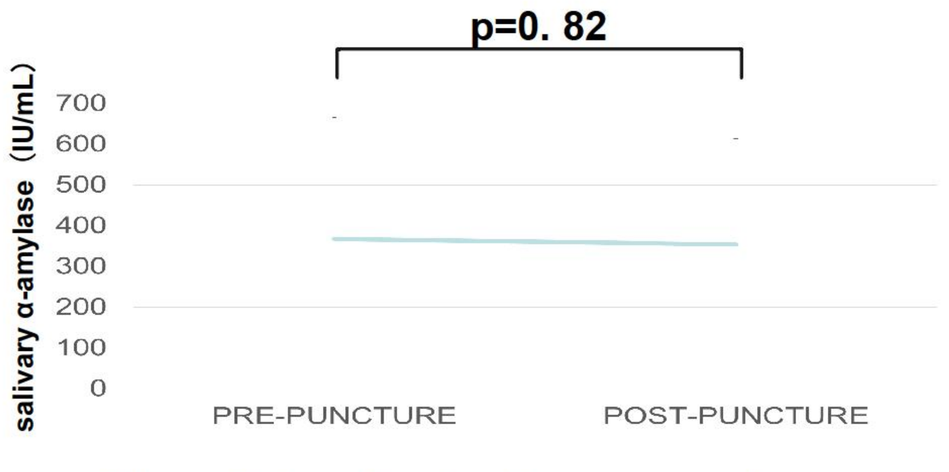


Figure2. Levels of salivary α-amylase before and after the puncture

CONCLUSIONS

In this study, we measured chromograninA as a mental stress marker and salivary amylase in relation to stress caused by physical pain. In both cases, these markers showed no sign of elevation.

These results strongly point towards the fact that the buttonhole puncture method might enable needle insertion without mental or physical stress.

DOI: 10.3252/pso.eu.52era.2015
ePosters supported by F. Hoffmann- La Roche Ltd.
52nd ERA-EDTA CONGRESS London 2015 United Kingdom MAY 28th-31st
PosterSessionOnline.com