Case Report

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Paroxysmal Atrial Fibrillation Treated by TCM Tuina: A Case Report

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ABSTRACT

Background: Atrial fibrillation (AF) is an arrhythmic heart disease characterized by P wave disappearance and replacement with polymorphic coarse fibrillation wave on electrocardiogram (ECG). The incidence and prevalence of AF have increased in recent years and can cause serious outcomes such as stroke and sudden death. Besides that, it poses a great burden on the world health care infrastructure and economy.

Case Summary: We present a 56-year-old man who had recent-onset atrial fibrillation (AF) for 1 hour with chest tightness, breathlessness, palpitation, perspiration, fatigue, and pale complexion. Treatment with propafenone, amiodarone, sotalol, single-acupuncture and traditional Chinese decoction slowed the heart rate but failed to complete rhythm control. The Tuina physician performed finger-pressing manipulation, finger-kneading manipulation, sinew-flicking manipulation, palm-pushing manipulation, grasping manipulation and sweeping manipulation on Neiguan(PC 6), Feishu(BL 13), Xinshu(BL 15), Geshu(BL 17), Gaohuang(BL 43), Jiquan(HT 1), Shaohai(HT 3), Danzhong(CV 17), Zhongfu(LU 1), Yunmen(LU 2), Tianchi(PC 1), Jianjing(GB 21), upper back, top of head, and temporal area for 40 min. At 38 min, while the Tuina physician performed finger-pressing manipulation at Neiguan(PC 6) on the right arm of the patient, the main symptoms were relieved, and fibrillation wave turned to sinus P wave simultaneously in the next 3 min. The patient's condition was alleviated without relapse during the subsequent 2-month follow-up.

Conclusion: Symptoms of AF were significantly relieved and cardioversion appeared after drug treatment and Tuina manipulations.

Keywords: Traditional Chinese Medicine; Tuina; Manipulation; Alternative Treatment; Paroxysmal Atrial Fibrillation; Cardioversion; Case Report

Abbreviations: AF: Atrial Fibrillation; ECG: Electrocardiogram; QOL: Quality of Life; TCM: Traditional Chinese Medicine; ANS: Autonomic Nervous System; PAF: Paroxysmal AF; BNP: Brain Natriuretic Peptide; ERP: Effective Refractory Period; MSC: Mechanosensitive Channel; NOS: Nitric Oxide Synthas; LF: Low Frequency; HF: High Frequency; TP: Total Power; PVs: Pulmonary Veins; LDH: Lactate Dehydrogenase

Core Tip

Atrial fibrillation (AF) is an arrhythmic heart disease characterized by P wave disappearance and replacement with fibrillation wave on ECG. Tuina, as well as Traditional Chinese therapeutic massage, is a manual therapy operating on acupoints. This case showed that drug treatment combined with Tuina can improve clinical symptoms and Tuina had the effect of cardioversion. The treatment helped the patient maintain remission for at least 2 months with no adverse effects. We believed Tuina has potential to be a complementary and alternative therapy for AF.

Introduction

AF is the most common arrythmia in clinical practice with main manifestations of fatigue, reduced exercise capability, and impaired quality of life (QOL) [1]. It is characterized by pleomorphic coarse fibrillation wave replacing sinus P wave on ECG. At present, global estimates reveal that there are approximately 33 million people with AF [2]. The prevalence rate of worldwide AF from 1990 to 2010 increased from 5.70‰ to 5.96‰ (men) and 3.60‰ to 3.73‰ (women) [3]. Prognosis of AF is usually not optimistic, which increases mortality and risk of sudden death [4,5]. It is also associated with several critical diseases such as stroke, dementia and heart failure. As well as damaging QOL of patients, AF brings a heavy economic burden to countries. In the US, every patient must pay an extra US$ 8700, which results in a US$ 26 billion annual increase in national healthcare costs [6]. According to evidence-based medication, the main approaches for treating AF are prevention of thromboembolism, and heart rate and rhythm control. Heart rate control includes beta blockers such as metoprolol, calcium channel antagonists such as verapamil, and digitalis glycosides such as digoxin. Rhythm control drugs includes flecainide, dofetilide and propafenone recommendated as class Ic and amiodarone as class III according to the guidelines [7]. The mechanism of antiarrhythmic drugs is to inhibit abnormal automaticity and conductivity of depolarized cells by blocking or regulating ion channels, and they could also cause adverse drug-induced arrhythmogenic effects [8-10].

Such adverse effects also have an economic burden. Annual cost for an average hospitalized AF patient is increased by US$ 3089 because of adverse events monitoring [11]. Chinese herbal medicine, acupuncture and yoga are considered as alternative treatments for AF and they had recorded cases [12-14]. There was a classic complementary therapy for AF which had no published previous detailed case but it truly has an antiarrhythmic effect. Traditional Chinese Medicine (TCM) Tuina, as well as TCM therapeutic massage, is an external therapy by using hands or limbs to do manipulations on the body of patients. The force from hands or limbs when doing manipulations is always regarded as a mechanical stimulus which could interact with organs and tissues. This is commonly accepted reason that Tuina can treat musculoskeletal and visceral diseases. Different from western manipulations such as chiropractic manipulation or joint mobilization, TCM Tuina is guided by ancient theory of TCM. Ancient TCM thinks that Tuina has therapeutic effect for AF or other heart diseases. With the present case, we aimed to explain the modern mechanism of action of Tuina for treating AF from two aspects. One was mechanical stimulation mediated by ion channels, and the other was the relationship between acupoints and structural function of the autonomic nervous system (ANS). In this case, a patient with new-onset paroxysmal AF (PAF) whose condition was relieved by drugs, single-acupuncture and Chinese herbal decoction, and was significantly improved by Tuina, and the patient maintained sinus rhythm for at least 2 months.

Case Presentation

Chief Complaints

A 56-year-old man who works in our hospital, was sent to the Cardiovascular Ward after overworking at 14:00 p.m., on May 7, 2020 with symptoms of chest tightness, breathlessness, palpitation, perspiration, fatigue, and pale complexion for 1 hour.

History of Present Illness

After long-term heavy work, the patient was admitted as an emergency to the Cardiovascular Ward, with the above symptoms for 1 hour. The patient stated that his condition was recent onset. The chest tightness was continuous without relief after rest, followed by shortness of breath, sweating on the head and fatigue. No chest pain, cyanosis, vertigo, or loss of consciousness was reported. ECG and ECG monitoring showed heart rate of 139 bpm and AF wave. No structural abnormality was seen on bedside cardiac ultrasound.

History of Past Illness

The patient had no previous medical history.

Personal and Family History

None.

Physical Examination

The patient's temperature was 36.5°C, heart rate 139 bpm, respiratory rate 25 breaths/min, and blood pressure 129/71 mmHg. Heart examination showed no precordial bulge or depression, no pulsatile movement, trills or friction, no enlargement of dullness area, and no murmur or abnormal heart sound. The patient was in low spirits, and had poor appetite, adequate sleep, and normal urination. The results of TCM tongue and pulse diagnosis showed the tongue was slightly reddish with a thin white coating and the pulse was rapid and intermittent.

Laboratory Examinations and Imaging Examinations

Blood tests included routine blood tests, serum lactate dehydrogenase (LDH), creatine kinase isoenzyme-MB (CK-MB), cardiac troponin-I (cTnI), myoglobin (Mb) and brain natriuretic peptide (BNP) (Table 1). BNP was elevated and revealed that neither myocardial damage nor infection occurred. Bedside cardiac ultrasound was performed due to inconvenient motion of the patient and showed no cardiac structural malfunction (Figure 1). The most important diagnostic information was that ECG and ECG monitoring showed AF waves with rapid heart rate (139 bpm), no prolongation of P-R interval and QRS duration, S-T segment elevation or depression (Figure 2A & 2B).

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Table 1: Laboratory tests.

WBC (10^9/L)	RBC (10^{12}/L)	HGB(g/L)	GRAN (10^9/L)	LYMPH (10^9/L)
9.40	5.40	160	6.1	2.6
LDH (U/L)	CK-MB (ng/ml)	cTnI (ng/ml)	Mb (ng/ml)	BNP (pg/ml)
404	1.60	0.00	23.8	150

Note: Reference values: WBC: (3.5-9.5) × 10^9/L; RBC: (3.5-5.5) × 10^{12}/L; HGB: 110-160 g/L; GRAN: (1.8-6.3) × 10^9/L; LYMPH: (1.1-3.2) × 10^9/L; LDH: 313-618 U/L; CK-MB: 0.3-4.0 ng/ml; cTnI: <0.03 ng/ml; Mb: <70 ng/ml; BNP: <100 pg/ml. WBC: White blood cell count; RBC: Red blood cell count; HGB: Hemoglobin; GRAN: Neutrophilic granulocyte; LYMPH: Lymphocyte.

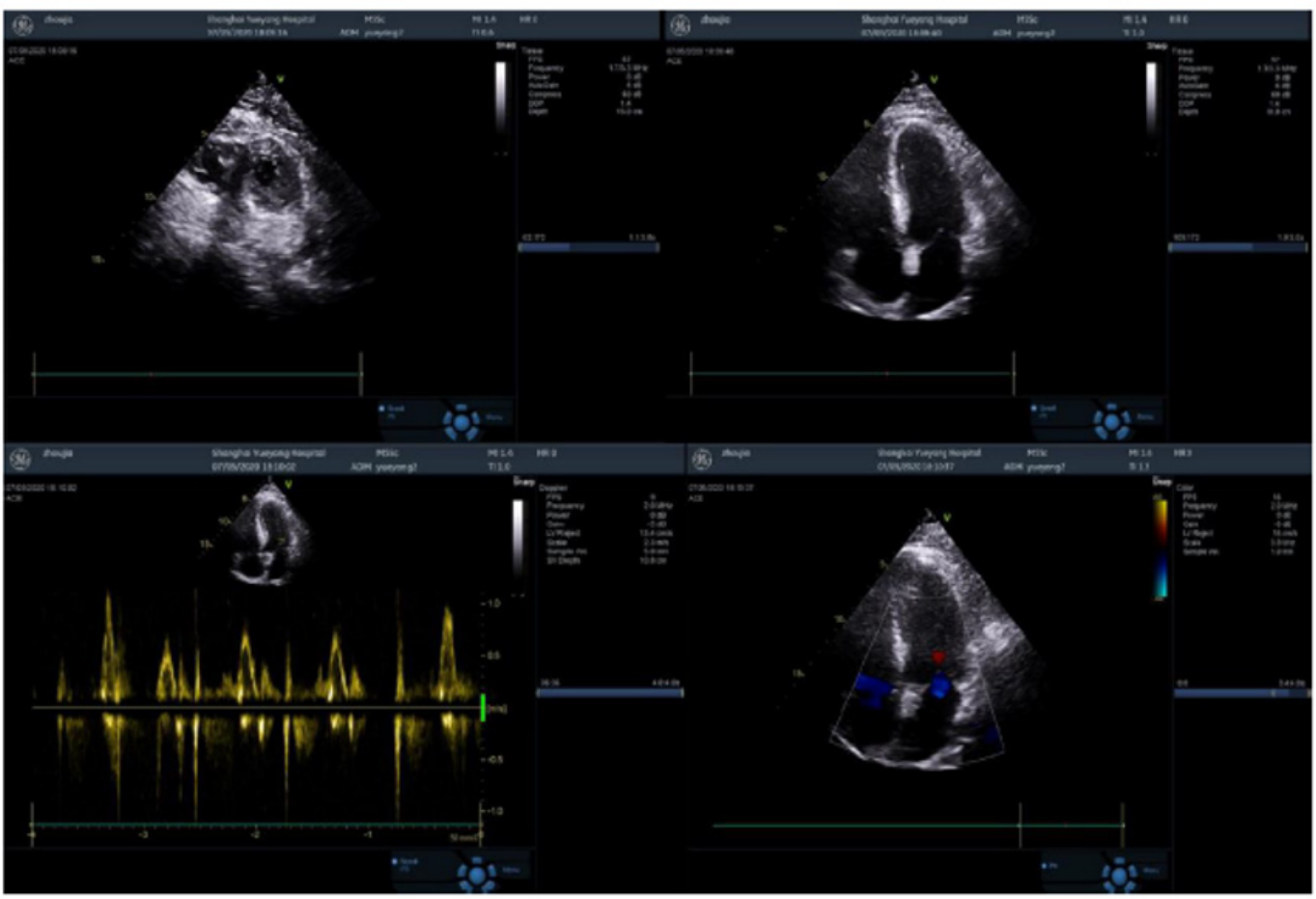

Figure 1: Images of bedside cardiac ultrasound before treatment. Cardiac ultrasound showed no structural damage on heart.

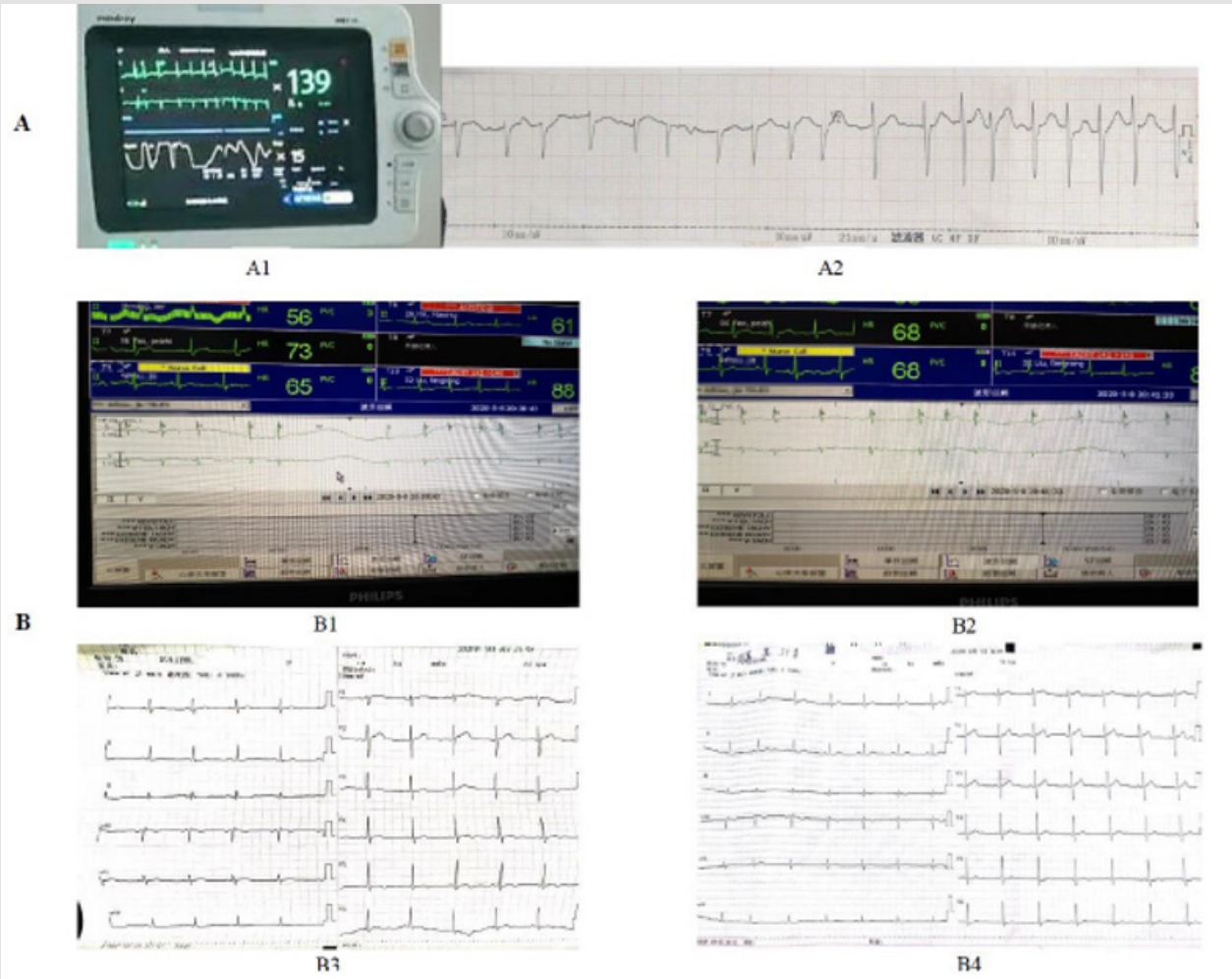

Figure 2: Comparison of ECG results before (A) and after (B) treatment.
1. A1: A capture of the ECG monitoring;
2. A2: The bedside ECG result showed fibrillation waves
3. B1: Long ventricular pauses appeared on telemetry system when manipulation was operated on right Neiguan(PC 6);
4. B2: Conversion of sinus rhythm;
5. B3: ECG result during observation period, no reappearance of fibrillation waves;
6. B4: ECG result after the most recent treatment showed sinus rhythms.

Final Diagnosis

The final diagnosis was PAF.

Treatment

The medical record is shown in (Figure 3). At 14:05 p.m., the patient was given propafenone (600 mg orally) and amiodarone injection (maintenance dose of 80 mg/h intravenously), which reduced heart rate to 105 bpm, relieved palpitation, but did not get rid of fibrillation waves. At 14:10 p.m., the patient was started to receive amiodarone injection (maintenance dose of 80 mg/h intravenously). At 14:20 p.m., the patient accepted single-acupuncture treatment on Neiguan(PC 6) and Shaohai(HT 3), Chinese herbs decoction 250 ml and sotalol (80 mg/d, p.o.). At 19:30 p.m. on May 8, there was already 2350 mg amiodarone infusion, which reduced ventricular rate to 70 bpm, but still no cardioversion appeared. The closer the time got to 48-hour window period, the lesser possibility of pharmacological cardioversion showed if AF was still present. So, the medical team decided to prepare anticoagulation, fasting, intravenous anesthesia, and endotracheal intubation for direct-current cardioversion. At the time of preparation, a member of the medical team suggested Tuina as the

last attempt at nonoperative cardioversion. Tuina was performed at 20:00 p.m. on May 8. The whole treatment was completed by a Tuina therapist, who has at least 30-year work experience. The following therapeutic areas were selected. (1) Acupoints (Table 2): Neiguan(PC 6), Feishu(BL 13), Xinshu(BL 15), Geshu(BL 17), Gaohuang(BL 43), Jiquan(HT 1), Shaohai(HT 3), Danzhong(CV 17), Zhongfu(LU 1), Yunmen(LU 2), Tianchi(PC 1), and Jianjing(GB 21). (2) Body regions: upper back, top of head and temporal area.

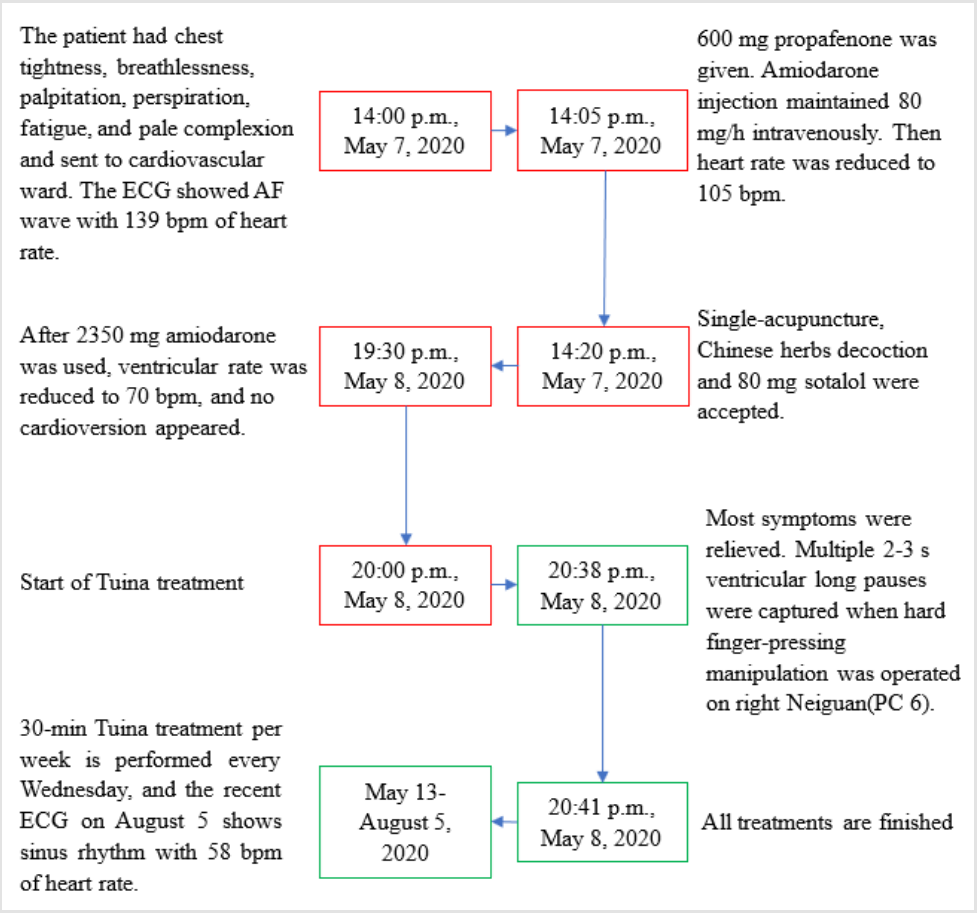

Figure 3: Timeline of the medical record.

Table 2: Description of the location of acupoints used in the present case.

Name	Meridians	Alphabetic code	Description of location
Zhongfu	lung meridian	LU 1	On the anterior thoracic region, at the same level as the first intercostal space, lateral to the infraclavicular fossa. 6 B-cun lateral to the anterior median line
Yunmen	lung meridian	LU 2	On the anterior thoracic region, in the depression of the infraclavicular fossa. medial to the coracoid process of the scapula, 6 B-cun lateral to the anterior median line
Danzhong	conception vessel	CV 17	In the anterior thoracic region, at the same level as the fourth intercostal space, on the anterior median line
Jiquan	heart meridian	HT 1	In the axilla, in the centre of the axillary fossa, over the axillary artery
Shaohai	heart meridian	HT 3	On the anteromedial aspect of the elbow. Just anterior to the medial epicondyle of the humerus at the same level as the cubital crease
Tianchi	pericardium meridian	PC 1	In the anterior thoracic region. in the fourth intercostal space, 5 B-cun lateral to the anterior median line

Neiguan	pericardium meridian	PC 6	On the anterior aspect of the forearm, between the tendons of the palmaris longus and the flexor carpi radialis, 3 B-cun proximal to the palmar wrist crease
Feishu	bladder meridian	BL 13	In the upper back region, at the same level as the inferior border of the spinous process of the third thoracic vertebra, 1.5 B-cun lateral to the posterior median line
Xinshu	bladder meridian	BL 15	In the upper back region, at the same level as the inferior border of the spinous process of the fifth thoracic vertebra, 1.5 B-cun lateral to the posterior median line
Geshu	bladder meridian	BL 17	In the upper back region, at the same level as the inferior border of the spinous process of the seventh thoracic vertebra, 1.5 B-cun lateral to the posterior median line
Gaohuang	bladder meridian	BL 43	In the upper back region, at the same level as the inferior border of the spinous process of the fourth thoracic vertebra, 3 B-cun lateral to the posterior median line
Jianjing	gallbladder meridian	GB 21	In the posterior region of the neck. at the midpoint of the line connecting the spinous process of the seventh cervical vertebra with the lateral end of the acromion

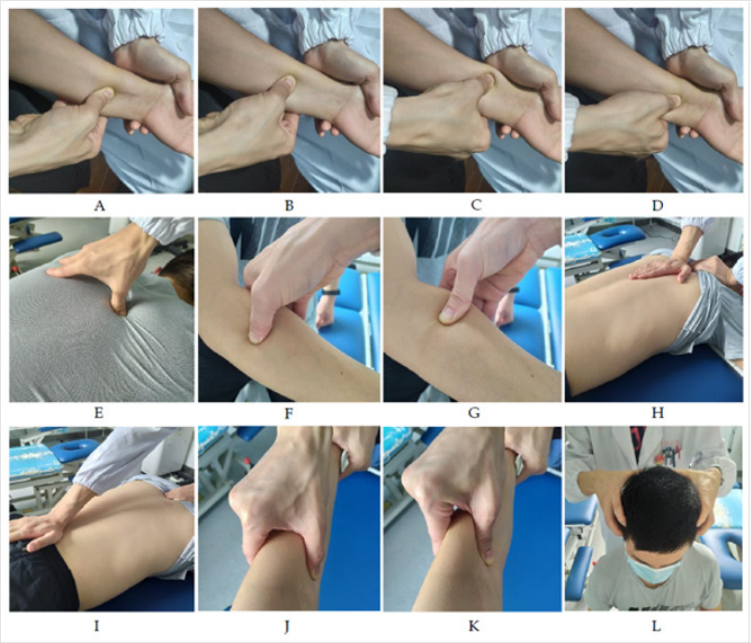

Figure 4: Manipulations used in this case (A model display in images).
1. A-D: Finger-kneading manipulation;
2. E: Finger-pressing manipulation;
3. F-G: Sinew-flicking manipulation;
4. H-I: Palm-pushing manipulation;
5. J-K: Grasping manipulation;
6. L: Sweeping manipulation.

The following manipulations were used (Figure 4):

1. Finger-pressing manipulation: using the fingertip or finger pulp to press the body surface.
2. Finger-kneading manipulation: using fingerprint side on treated site to rotate the subcutaneous tissue gently.
3. Sinew-flicking manipulation: using the thumb vertically on muscle and tendon-like plucking strings.
4. Palm-pushing manipulation: using full palm or heel of hand to create linear motion on the treated area.
5. Grasping manipulation: using the thumb and the other four fingers to hold and squeeze the therapeutic region or acupoints rhythmically.
6. Sweeping manipulation: using all fingers to create kinetic friction back and forth in the temporal region. At first, the physician inserted a needle into the left Neiguan(PC 6).

Then the patient accepted finger-pressing and kneading and sinew-flicking manipulation on Feishu(BL 13), Xinshu(BL 15), Geshu(BL 17) and Gaohuang(BL 43) for 30 min. When Tuina treatment had been performed for 30 min, the needle at left Neiguan(PC 6) was withdrawn. After that, sinew-flicking manipulation on Shaohai(HT 3), point manipulation on Jiquan(HT 1), finger-kneading manipulation on Danzhong(CV 17), finger-pressing manipulation on Zhongfu(LU 1), Yunmen(LU 2) and Tianchi(PC 1), pushing manipulation on the upper back, grasping five collaterals (top of head), sweeping temporal

area and grasping manipulation on Jianjing(GB 21) were performed. At 20:38 p.m., the physician found a palpable bulge near the right Neiguan(PC 6), and performed hard finger-pressing manipulation on it. At 20:41 p.m., all treatments were finished.

Outcome and Follow-Up

The use of propafenone, sotalol and amiodarone reduced the heart rate to 70 bpm and partly relieved palpitation. When the hard finger-pressing manipulation was performed on right Neiguan(PC 6) with a palpable bulge, the patient stated immediately that his chest tightness was relieved, while his pale complexion gradually turned red. Multiple 2–3 seconds ventricular long pauses were captured simultaneously on a cardiac telemetry system. Three minutes after the long pauses appeared, the AF wave converted to sinus rhythm (Figure 2B). From then, amiodarone was stopped and the sinus rhythm remained stable during 10 h observation. Finally, he was discharged on May 9, 2020. Although the patient had no obvious symptoms after discharge, he asked for continuous Tuina treatment. The Tuina therapist made a recovery plan for the patient, which comprised 30-min Tuina treatment per week. To date, the patient still insists on treatment every Wednesday and feels significant improvement in capability of movement during 2 months. ECG after recent treatment on August 5, 2020 showed sinus rhythm with heart rate of 58 bpm.

Discussion

Although there is no scientific proof about the effect of Tuina for treating AF, some researchers have demonstrated that Tuina can treat other heart diseases, which makes treatment of AF possible. For ischemic heart disease, many clinical trials have shown significant relief of chest pain and elevation of ST segment depression [15-17]. Others have shown improvement of QOL and cardiac function [18-20]. For arrhythmia, Shao, et al. [21] performed Tuina on left Shencang (KI 25) to recover 14 patients with paroxysmal supraventricular tachycardia. They thought that Tuina acted against re-entry tachycardia. Nie [22] used finger-pressing manipulation on Neiguan(PC 6) to cure six patients with sinus tachycardia. However, no one has ever used Tuina to treat AF. For routine application, propafenone was offered as a high recommendation (Class Ic) according to clinical guidelines for AF [7]. The heart rate responded rapidly to propafenone, reduced a little but tachycardia remained with no appearance of sinus P wave. Amiodarone and sotalol further reduced the heart rate, but still could not restore the rhythm even used for 36 h, which confirmed that pharmacological cardioversion was difficult in this case. In fact, drugs treatment didn't fail completely. It achieved rate control at least in the present case. As a potent sodium channel blocker, propafenone mainly inhibits fast inward sodium current in order to prolong the time of phase 0 depolarization. Therefore, conductivity is inhibited, which reduces the ventricular rate [23].

Furthermore, research shows that 33% of patients who take propafenone do not maintain sinus rhythm, which could explain the failure of AF wave conversion [24]. Amiodarone is a broad-channel blocker, inhibiting sodium, potassium and calcium channels, so it not only inhibits sodium inward currents but also transient and delayed outward potassium currents and calcium currents, which could significantly extend action potential duration and effective refractory period (ERP) to lower the heart rate [25]. Sotalol, a beta blocker, can lower automaticity to reduce conductivity of the atrioventricular node. In the present case, why none of the drugs turned AF to sinus P wave was probably that the ectopic pacing was so strong that the circuit time of re-entry was still longer than ERP after drugs were used, which led to the sinoatrial node not taking back control. How did Tuina treatment restore heart rhythm? It should be noted that the relief of symptoms and occurrence of ventricular long pause did not happen at the beginning of Tuina treatment, but not until the finger-pressing manipulation was performed on right forearm Neiguan(PC 6). Regarding the rhythm control effect of Tuina, we found a possible explanation based on the mechanism of ion channel regulation. The cardiac ion channel is one of the most important factors influencing cardiac electrophysiological activity. As heart rate and rhythm control drugs can react with voltage-gated ion channels on the myocardial cell membrane, does Tuina manage to regulate cardiac automaticity and conductivity through some other ion channels? Tuina performed on the body surface is a kind of external mechanical stimulus.

The mechanosensitive channel (MSC), found in the 1970s, is an ion channel that can react and respond rapidly according to change of mechanical stress load on the cell membrane. Piezo proteins, including Piezo 1 and 2, found in the past 10 years, are important in the MSC. They can undergo conformational change under external stress stimulation to open their channels and regulate transport of ions [26,27]. Piezo 1 is distributed on several visceral cells, including myocardial cells, and can selectively permeate sodium, potassium, calcium and magnesium ions [26]. Researchers have found overload of mechanical stress and reduction of potassium ion channels in AF cardiac tissue [28,29], which implies that, as the MSC, Piezo plays an important role in the process of AF or anti-AF. Volkers, et al. [30] proved that activated myocardial cell Piezo 1 can feel the load of mechanical stimulus, and have stronger sensibility to low intensity of stress stimulation, which implies that gentle stress stimulation could trigger Piezo 1 respondence easily. Therefore, based on these theories, we have enough reason to hypothesize that one of the mechanisms of Tuina for treating AF is to influence different ion currents mediated by Piezo ion channels on myocardial cell membranes, to regulate automaticity and conductivity of the heart. Certainly specific experiments of Tuina in regulating cardiac Piezo ion channels will need to be conducted to prove this hypothesis. Another question is how does Tuina recover AF by acting on acupoints on distant limbs, such as Neiguan(PC 6).

It is obvious that manipulations on acupoints far from the heart cannot produce mechanical force stimulation on the heart, so this cannot be explained by Piezo ion channels. From the TCM viewpoint, Qi and Blood, moving in the Meridians of the human body, are vital substances for maintaining physiological function. All parts of the body, including the viscera, are connected and conducted by Qi and Blood through Meridians. Acupoints are windows and doors on Meridians, which can receive stimulation in order to regulate Qi and Blood (e.g. by acupuncture or Tuina manipulation). Ancient TCM theories did not come up with the concept of AF. They proposed that AF-like symptoms such as palpitation, breathlessness, and chest tightness happened because of Qi and Blood stagnation in the heart and its surrounding Meridians. So, one way to treat this condition was to stimulate distant acupoints to activate the motion of Qi and Blood and make them move through limb Meridians to the heart, to eliminate the stagnation in order to recover the function of the heart and its surrounding Meridians. The ANS starts from spinal cord, giving off branches to both limbs and viscera. Inspired by the ancient theories, we found that acupoint-ANS could explain how Tuina manipulations treat AF by performing on distant acupoints. Before that, it was known that the presence of AF is associated with hyperactive intrinsic ANS, especially ganglionated plexi located on pulmonary veins (PVs) [31,32].

A study showed that PVs play a key role in AF, particularly in PAF, and PVs have features that make their favored zone harbor both focal automatic and microreentrant activity [33]. The PV area is also the place where the main three concepts about the mechanism of AF occur, namely, the multiple re-entrant wavelets, rapidly discharging automatic foci and a single re-entrant circuit with fibrillatory conduction [34-36]. These three concepts explain the occurrence of AF. The basic theory is that hyperactive ANS produces abnormal current activities that cover electrical activities from the sinoatrial node. What if Tuina on distant acupoints can affect these irregular electrical activities through the ANS? Previous studies have shown that stimulation of acupoints could regulate ANS function, enhance activity of the vagus nerve, and protect myocardial tissue. Li, et al. [37] demonstrated a further relationship between Neiguan(PC 6) and the ANS. After stimulation of Neiguan(PC 6), heart rate variability index of patients with coronary heart disease was measured, including total power (TP), high-frequency (HF), which was significantly higher than that of the control group, and low-frequency (LF) power and LF/HF ratio were lower than the control group, which implied that activity of the total ANS and vagus nerve was improved and sympathetic nerve activity was decreased. Stimulation of Neiguan(PC 6) only had an effect on pathological heart, but not on healthy hearts [38,39], which implies that Tuina manipulation of distant acupoints, especially Neiguan(PC 6), has a tendency to regulate abnormal electrical activity.

Some other studies have provided evidence about the role of neural structure in the treatment of heart disease with acupoints. Gong, et al. [40] used the Enhanced Labelled Polymer System to detect neuron content of nitric oxide synthase (NOS) in T4–T6 spinal cords and myocardial cells after Tuina on an acupoint and a cutaneous non-acupoint. They found NOS in T4–T6 spinal cords in both the acupoint and non-acupoint groups, but found significantly more NOS in myocardial tissue of the acupoint group than non-acupoint group. Xinshu(BL 15) is not a distal acupoint and is located in the upper back region, at the same level as the inferior border of the spinous process of the fifth thoracic vertebra, 1.5 B-cun (1 B-cun equals 3.33cm)lateral to the posterior median line. However, at least it showed that Tuina can influence heart activity by transmitting neuronal signals through the ANS when performed on acupoints innervated by the same spinal segment as the heart. Neiguan(PC 6) is innervated by the C6–T1 spinal segment, which overlaps with the heart, and this needs to be investigated further to confirm its relevance.

Conclusion

AF is a heart disease with high prevalence, mortality and economic cost. Treatment methods include drugs and catheter and surgical ablation. However, drugs that control heart rate and rhythm may fail to induce cardioversion or even have an arrhythmogenic effect. In this situation, a complementary treatment is needed. Tuina, as a complementary and alternative therapy, provides a safe, effective, and inexpensive treatment for patients with AF. This case showed a surprising outcome in treating PAF by drugs and Tuina, but more cases of other types of AF need to be reported to test the universality and specificity of the effects of Tuina. Furthermore, it is necessary to initiate clinical trials about the effect of Tuina in treating AF, and to initiate studies of the mechanism of action of Tuina in treating AF, in relation to neural structure and function and cardiac ion channels.

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Author Contributions

Gong L designed the treatment of Tuina and performed manipulations in the present case, and revised the manuscript for important intellectual content; Xing H also revised the manuscript for important intellectual content; Shao S, Chu YZ and Chen H designed the treatment of drugs cardioversion; Fu YY and Yang CH prescribed Traditional Chinese herbal decoction; Sun WQ performed the single-acupuncture treatment; He PF, Meng FC, Xu WS and Zhu YX acquired the medical data; Kang ZR analyzed, interpreted the data, and contributed to manuscript drafting.

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Footnotes

Informed Consent Statement

Informed written consent was obtained from the patient for publication of this report and any accompanying images.

CARE Checklist (2016) Statement

The authors have read the CARE Checklist (2016), and the manuscript was prepared and revised according to the CARE Checklist (2016).

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Corresponding Author's Membership in Professional Societies

Fellow of China Association of Chinese Medicine.

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