



OCCUPATIONAL ASTHMA TO THE MUSSEL ANEMONE, *Actinia equine*

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INTRODUCTION

The term anaphylaxis was coined by Charles Richet and Paul Portier when they tried to immunize dogs with *Actinia* extracts in 1902, However very few cases of IgE mediated allergy caused by *Actinias* have been described. Herein, we describe for the first time two patients with occupational asthma caused by the beadlet anemone *Actinia equine*.

METHODS

Case 1: A fisherman from Cangas, (Pontevedra, Spain) specialized in loading and unloading **mussels** for a mussel farm.

He has a 10-year history of episodes of skin pruritus, hives on exposed areas of skin, sneezing, oculonasal itching, cough and wheezing dyspnea. These symptoms only occur when he is loading and unloading the mussels. When he is not working, he is symptoms - free.

Case 2: A woman who has worked for 40 years at a **mussel** treatment plant in Moaña (Pontevedra, Spain). In November 2015, she began to suffer episodes of sneezing, oculonasal itching, cough, wheezing dyspnoea and nocturnal dyspnoea. Her symptoms worsened at work and improved at home during the weekend.

Both related their symptoms to exposure to the anemone found on mussel shells (*Actinia equine*).

Both patients were not taking any medication when they came to our Allergy Centre. All physical explorations and pulmonary function tests were normal.

We performed an occupational asthma study.

RESULTS

Specific bronchial provocation test using anemone extract:

Case 1: Positive at a concentration of 1:100 p/v.

28% fall in FEV₁ after 10 minutes.

Spontaneous recovery after two hours and no late response.

Case 2: Positive at a concentration of 1:10 p/v.

43% fall in FEV₁ after 5 minutes.

Late response after 8 hours with a 26% fall in FEV₁.

• Negative provocation in 2 asthmatic patients used as control.

Skin prick tests using anemone extract:

Case 1: *Actinia equine* 9 mm (3+); Histamine (10 mg/mL) 6 mm.

Case 2: *Actinia equine* 7 mm (2+); Histamine (10 mg/mL) 8 mm.

Glycerol saline 0 mm (in both patients)

• Controls: negative in 5, non-atopic people.

Battery of common inhalants and food extracts, including mussel:

Negative in both patients.

Immunodetection:

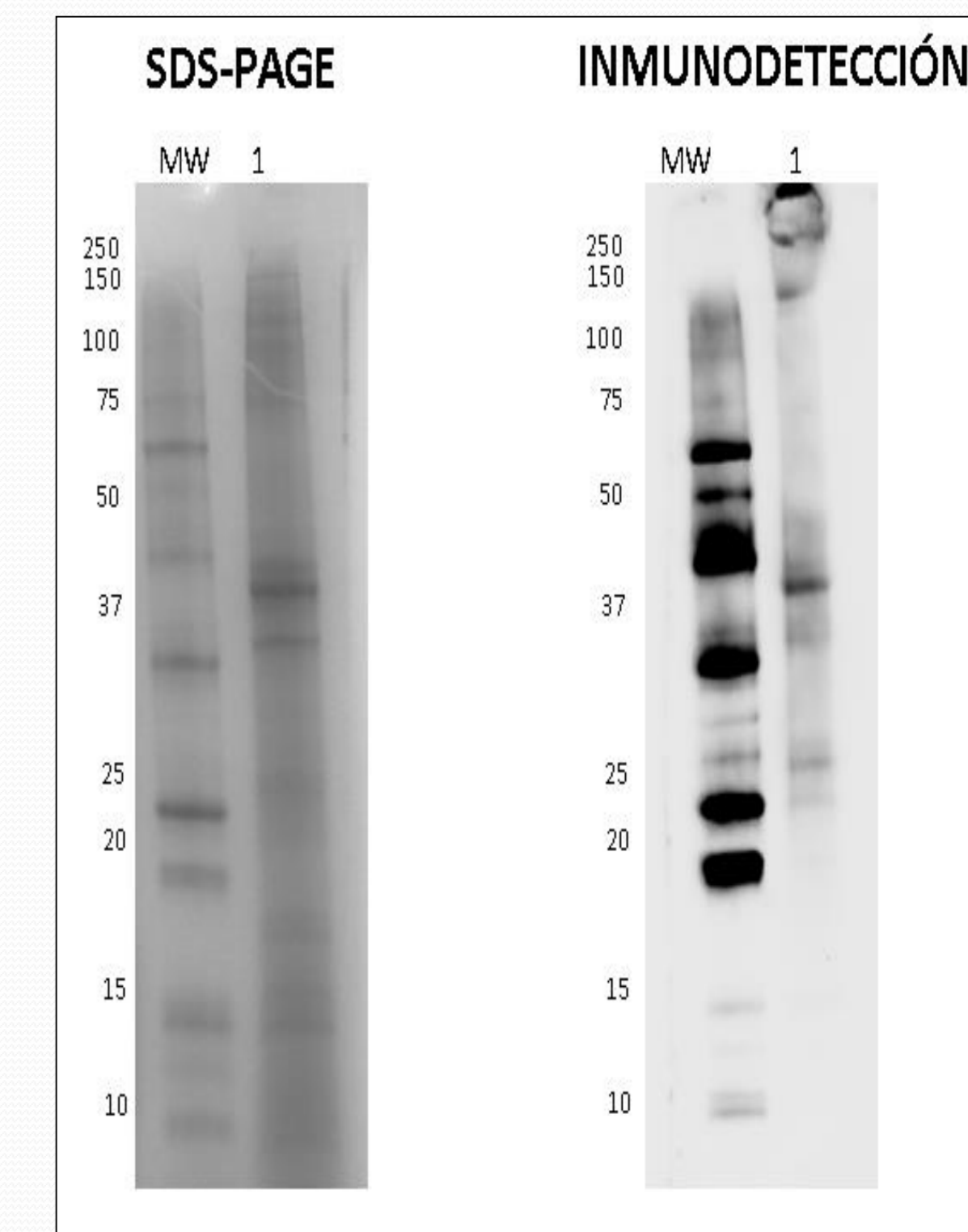
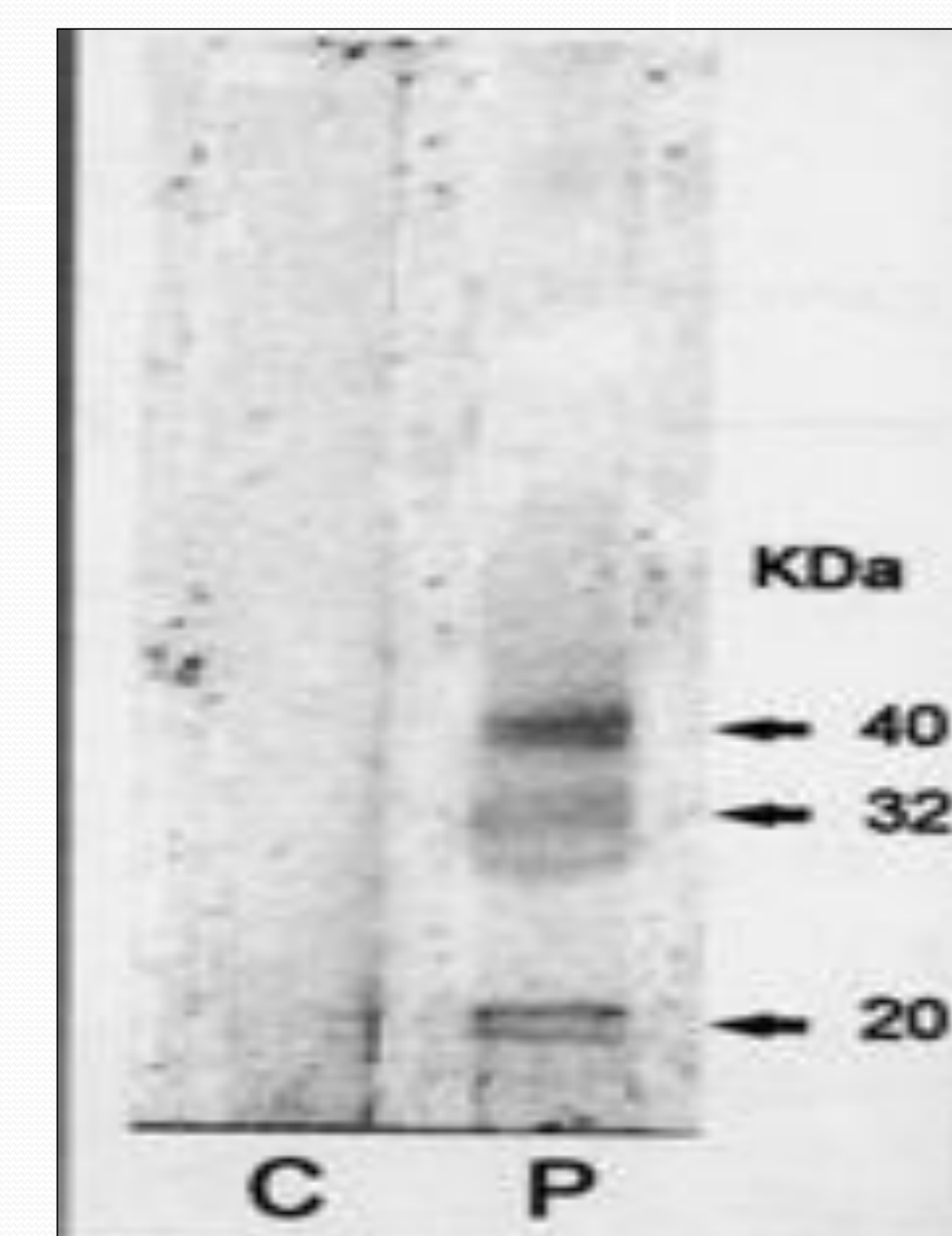
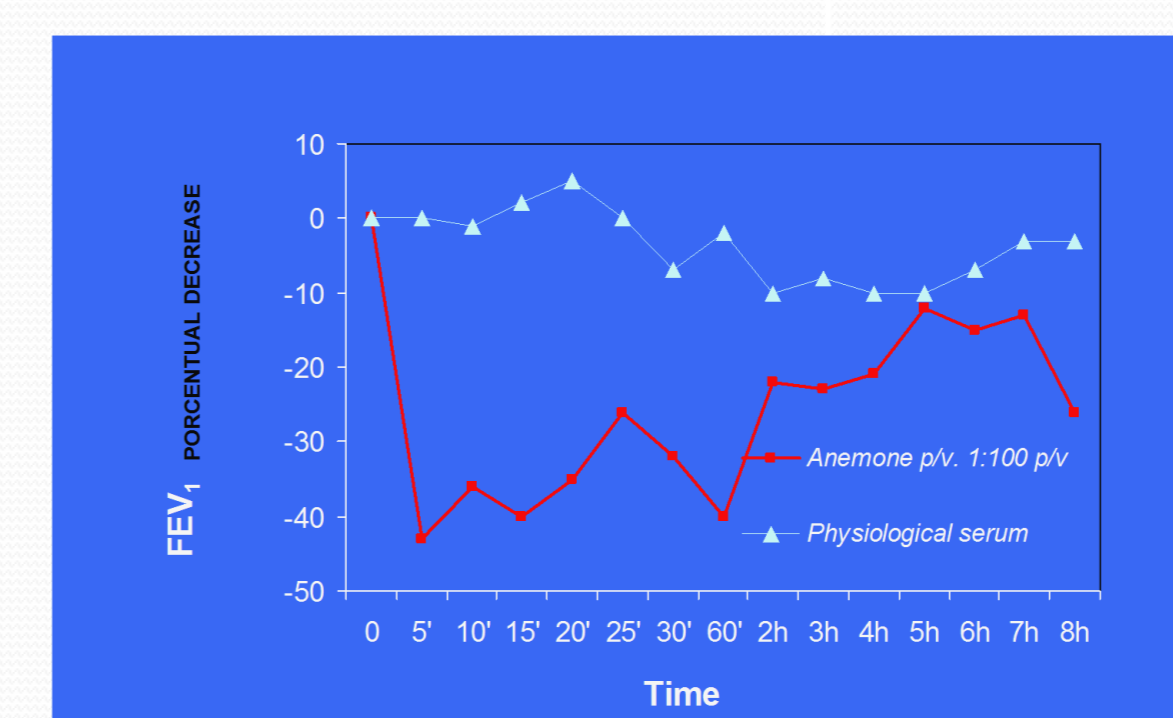
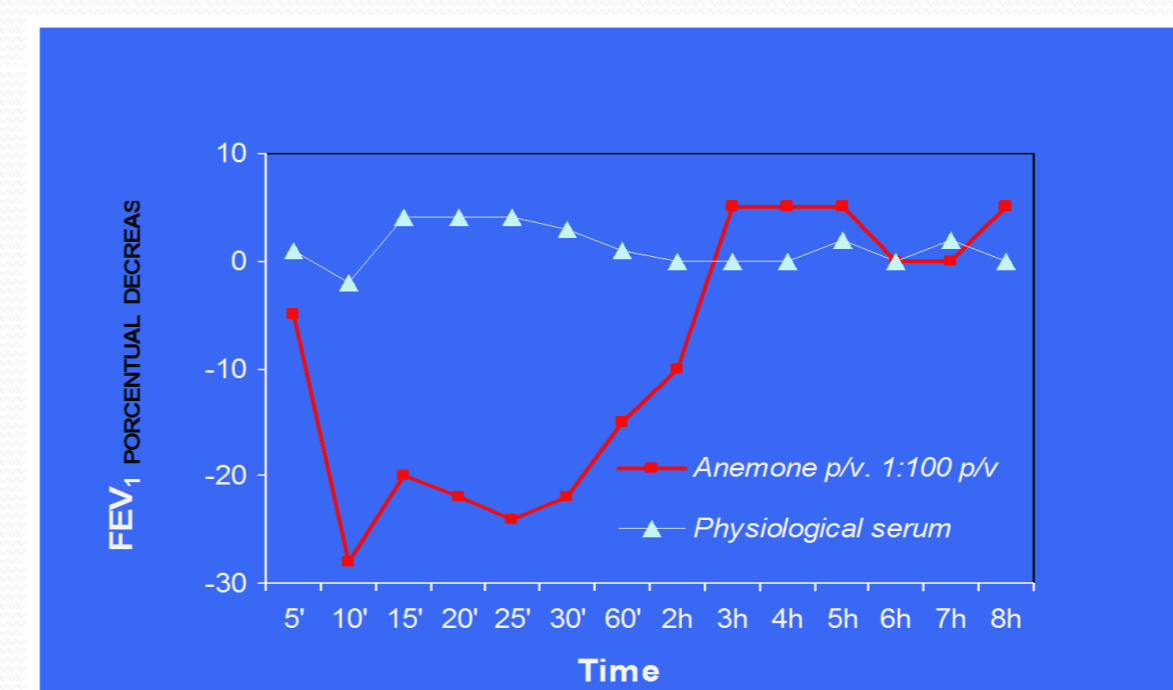
Case 1: 3 IgE binding bands were detected with a MW of 20, 32 and 40 kDa.

Case 2: 3 IgE binding bands were detected with a MW of 25, 30 and 40 kDa.

After diagnosis, the **patients changed their working tasks** to avoid exposure.

Follow-up visits were made at 2, 4 and 8 months after diagnosis.

The patients reported that **they were now symptom-free**.



CONCLUSION

We present two cases of IgE- mediated occupational asthma to the mussel anemone, *Actinia equine*.