Case Report

Renal amyloidosis and renal failure—a novel complication of the SAPHO syndrome

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Introduction

The acronym ‘SAPHO’ denotes the combination of Synostosis – Acne – Pustulosis – Hyperostosis – Osteitis; this rare syndrome is characterized by the occurrence of dermatoses with formation of sterile abscesses (in the past designated as ‘palmoplantar pustulosis’, ‘acne pustulosa’, ‘psoriasis pustulosa’), accompanied by sterile osteitis, resembling osteomyelitis and articular lesions causing synostosis.

So far, there have been no descriptions of the association of this syndrome with renal failure. In the following, we describe a patient, suffering from Sapho syndrome, who developed chronic renal failure secondary to AA amyloidosis.

Case report

In 1974, at age 26 years, the patient noted for the first time symmetrical palmar and plantar pustules. Over the next 10 years, such pustules erupted 3–4 times per year, persisted for 3–4 weeks, and cleared spontaneously.

In 1979, the patient noted for the first time bilateral pain in the sternal clavicular joints. In 1983, a check-up with skeletal X-rays and whole body scintigraphy was carried out. Massive tracer uptake was noted in both clavicles and in the entire sternum. X-rays showed sclerosis and thickening of the manubrium sterni. This led to the diagnosis of M. Paget and treatment with biphosphonates was started. In 1984, lumbar pain developed. By X-ray hyperostosis of the vertebral bodies was noted with incipient fusion of the 4th and 5th lumbar vertebrae. In 1990, an X-ray showed sclerosis of the right iliac bone and of the os sacrum (Figure 1).

The diagnosis of a ‘palmoplantar pustulosis’ was first made in October 1984 and was based on the findings presented in Figures 2 and 3.

Laboratory examination showed an elevated ESR (65–94 mm); serology was negative throughout; tests for HLA-B13-17 and 27 were negative. The content of these pustules was sterile and examination of urine was unremarkable. Treatment with retinoids (Tigason® 2 x 25 mg/day) was started.

In the fall of 1994, the patient was admitted to our hospital for the first time. He complained of dysesthesia and hypoaesthesia of the lower extremities. He was no longer able to tell whether he was wearing

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Renal amyloidosis and renal failure in the SAPHO syndrome

shoes or not. Intensive neurological examination including examination of liquor and MRT imaging led to the diagnosis of ‘myelitis with paraplegia’. Apart from the above neurological symptoms with hypoesthesia and pallestheses below Th6, coarse swelling of both sternal clavicular joints was noted, which was accompanied by extensive venous collateral circulation of the upper thorax pointing to central venous obstruction (Figure 4). X-ray examination documented massive bilateral thickening and sclerosis of the clavicles and of the manubrium sterni (Figure 5). The diagnosis of an ‘acquired hyperostosis syndrome’ was made. The thoracic CT scan confirmed the osseous changes and showed, in addition, increased density of the retrosternal tissue, thus providing an explanation for venous obstruction (Figure 6).

Laboratory examination showed extreme acceleration of ESR, elevated serum creatinine (1.4 mg/dl) and reduced Ccr (64 ml/min). Urinary findings included erythrocyturia and proteinuria (1.7 g/l; mixed glomerular and tubular pattern by disk electrophoresis). Both kidneys were of normal size by ultrasonography, but the echodensity of the parenchyma was increased. A renal biopsy was obtained which showed marked glom-

vascular amyloidosis of the AA type with almost complete tubular atrophy and marked interstitial fibrosis (courtesy Professor Helmchen, Hamburg).

The patient received diclofenac 100 mg/day. Under
this medication he developed acute gastroenteritis with
massive fluid loss. Irreversible renal failure developed
and the patient became dialysis dependent. Vascular
access in either arm was rendered impossible by bilat-
eral occlusion of the subclavian veins. Consequently,
a Gore-Tex® prosthesis was inserted in the right thigh.
Two stenoses at the site of anastomosis were dealt with
using more than 50 synonyms [3], such as
sterneocostoclavicular involvement in conjunction
with palmoplantar pustulosis.

Past literature described cases with this constellation
using more than 50 synonyms [3], such as
'spondoaarthropitis hyperostotica pustulo-psoriatica' [4],
'pustulous arthroostitis' [2], 'sterneclavicular hyper-
osing', [5] and 'acquired hyperostosis syndrome' [6].
Two cases of sternocostoclavicular hyperostosis were
reported first in 1975 by Köhler et al. [5], but an
accompanying skin lesion was not mentioned.

In the past 20 years, more than 100 reports of this
interesting syndrome appeared. The reported evolution
of the disease was very heterogeneous. Chamot et al.
[7] described the association of pustulous skin lesions
with osseous changes of the anterior thorax as ‘Sapho’
syndrome (synovitis, acne, pustulosis, hyperostosis, and
osteitis). The syndrome involves most frequently the
anterior thoracic wall, but may also involve the axial
skeleton and the iliosacral region. Unilateral sacroiliitis
is noted in approximately 50% of the patients [8].
Patients have also been described who suffered from
inflammatory bowel disease, e.g. Crohn’s disease and
colitis ulcerosa [3].

The palmoplantar pustulosis is characterized by
pseudoabscesses of the skin containing polymophonu-
clear leukocytes. Because of involvement of the vessel
wall this may resemble leukocytoclastic vasculitis. The
pus in the pustule is always sterile. There is no effective
therapy. Sterile abscess formation, e.g. acne conglobata
and psoriasis pustulosa, have been described and
related to the ‘Sapho’ syndrome.

Simultaneous development of skin and bone lesions
is unusual in the syndrome. Skin lesions may precede
(or follow) the bone lesions by years and decades [9]
and a temporal dissociation was also noted in our
patient.

Discussion

More than 30 years ago, Windom et al. [1] described
the concomitant appearance of inflammatory hyper-
trophic osseous lesions and articular changes in
patients suffering from chronic cutaneous inflamma-
tion. In 1981, Sonozaki et al. [2] reported on 53 cases
of ‘pustulous arthroostitis’, which they considered a
new rheumatological entity related to seronegative
spondyloarthropathy. They distinguished this new dis-
 ease from rheumatoid arthritis, ankylosing spondylitis,
psoriasis arthritis, and Reiter’s disease by the preferen-
tial sternocostoclavicular involvement in conjunction
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The bilateral swelling and sclerosis of the clavicles
on X-ray is typical and is demonstrable early on [6].
Using bone scintigraphy it is possible to make the
diagnosis early in more than 80% of the cases even in
the absence of X-ray changes [6]. In the differential
diagnosis, one has to consider not only classical
rheumatological diseases, e.g. Reiter’s disease and
Bechterew’s disease, but also Paget’s disease and (part-
icularly in children) infectious osteomyelitis or spond-
ylodiscitis. When there is monostotic involvement of
the appendicular skeleton, the possibility of Ewing
sarcoma must also be considered [3]. There is no
specific laboratory test to confirm the diagnosis of the
‘Sapho’ syndrome. ESR and C-reactive protein reflect
the degree of inflammatory activity and HLA B-27 is
positive in approximately one-third of the patients [10].

The pathogenesis of the disease is unknown. There
are some indications that Propionibacterium acnes [10]
is associated with the syndrome, analogous to reactive
arthritis following infections with chlamydia or yersi-
nia. Bone histology shows non-specific inflammatory
reactions. An infectious agent has never been demon-
strated and antibiotic treatment does not help.

Known complications are compression syndromes
involving the anterior thoracic wall, causing occlusion
of central veins as in our case [5]. In 1995 Australian
investigators reported on the occurrence of necrotizing
granulomatous pulmonary inflammation in patients
with a ‘Sapho’ syndrome [11]. Neurological involve-
ment, as in our patient, has so far not been reported.
Baseline drugs which are successful in the treatment
of chronic rheumatic diseases, e.g. MTX, azulfidine,
cyclosporin will have a long-term e

choimpact on the disease activity.

In the past, it has been stated [13] that the ‘Sapho’
syndrome is ‘admittedly extremely painful, but benign
and not associated with any complications’. This view
must be modified in view of the observation in our
patient who developed generalized amyloidosis,
chronic renal failure necessitating renal allotransplant-
ation, central venous obstruction by venous throm-
busis, and transient involvement of the spinal medulla.

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References


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