

June 3^d, 1966.

MEETING IN CINCINNATI

PRESENTATION OF SOLVAY DATA

(Dr. M.J. LEFEVRE)

In Belgium, at the plant of Jemeppe, the PVC production started in 1950, but from 1950 to 1962, no pathological case was to report.

In Jemeppe : an autoclave cleaner whose date of beginning in the job was October 1960, presented in 1963 several troubles onsetting one after the other in about six months.

The symptoms were vague and let first think to a liver defect, then the worker was treated for rheumatics by a general practitioner. In October 1963, in the medical center of the plant a general survey let discover a curious syndrome including :

- 1) bony lesions affecting the distal phalanxes of most of the fingers, presenting an uncommon picture of acroosteolysis,
- 2) bilateral cutaneous lesions appearing :
 - a) clinically as a swelling of the fingers and hands, without oedema, the skin looking shiny and smoothy,
 - b) histologically as a degeneration of connective tissue with, in the dermal layers, destruction of the elastic fibers of the skin which appear like old depolymerized rubber.

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- 3°) painful sensations in the fingers less or more constant, aggravated by pressing the top of the digits or moving the fingers.

The pains are aggravated by cold weather, in cold water or by the contact with cold tools.

- 4°) acroparaesthetic sensations i.e. tingling and numbness in fingers, hands and feet.

Both last symptoms may be resumed in the expression of Raynaud's phenomenon.

- 5°) general symptoms including faintness, severe asthenia (or weariness), sleepiness at day and sleeplessness at night.

General examination confirmed the absence of nervous, cardiac or renal lesion.

The hepatic functional and laboratory disturbances slowly disappeared and so did the histological lesions of the skin.

At the same plant, in June 1963, 2 other workers were affected by the sudden emission of gas when cleaning big concentrations of slurry in the top of a reactor.

Both of them complained of burning in eyes with profuse lacrymation, dizziness, cough and thoracic oppression.

One of the cleaner got out immediately and vomited. He presented later no other symptom.

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The second one remained longer inside the autoclave. After healing of his acute symptoms he presented the same evening : headache, loss of appetite, an itching rash of both hands.

This eruption became whitish and papular and last during several months.

In September, moving of fingers became painful and Raynaud's phenomenon set out.

Later, in October 1963, appeared weariness and sleepiness with faintness sensations.

These general symptoms let the two affected workers be withdrawn of the plant for sickness.

Both patients presented exactly the same syndrome and owing the fact that it was a very unusual one it was decided to publish the two pathological cases.

In both cases, after one year, the dermal lesions recovered completely and the bone defects (acroosteolysis) quite healed, the betterment of the general symptoms allowed the second worker to work again, but no more as an autoclave cleaner.

In May 1964, contact was taken with the medical centers of several factories abroad, belonging to Solvay's group and with Dr. K. HARRIS of I.C.I. Plastics Division.

Studying the bibliography, we discovered the report of 16 cases of non familiar acroosteolysis in the medical literature but no case has a tendency to recovery.

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In June 1965, in Brussels, Dr. ROUSH asked to Solvay, if we already noticed strange cases of acroosteolysis which were discovered in one plant of the B.G. Goodrich.

The actual situation in the different plants of Solvay can be reproduced in the next table (see enclosure 1).

Moreover, in the X.Rays pictures of the hands and fore-arms of several workers little round bone defects can be seen. Such tiny cysts seem to be due to little infarcts and after a certain time, about one year, these cyst disappear and let see a bony densification. In fact, we have no idea of the relation with PVC production but perhaps will other data precise this problem.

During my first stay in USA, I could notice that in Louisville not any of the affected workers presented general symptoms : no asthenia, no sleepiness, no faintness and no aversion to fats.

That is why I think that perhaps one, two substances may act together in Solvay European cases and perhaps one product less is involved in the cases of B.F. Goodrich.

The positive cases of every plant have been put together in a table (see enclosure n° 2). We have however to notice that the data of Jemeppe and Torrelavega are well filled, but those of Ferrare and Tavaux must be precised concerning the exact date of onset of the symptoms.

Such precision must be given by the plant medical centers to complete the real epidemiologic situation of every branch.

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ENCLOSURE 1

Symptoms	P L A N T S					Total
	J	Ta	T	F	Rh	
Number of autoclave cleaners	57	75	23	43	20 ?	218
Sensitive to cold	3	11	4	2	1	21
Arthritis	2	1	-	1	-	4
Blanching of the skin	2	4	4	-	-	10
Cyanosis of the skin	-	6	2	-	-	8
Skin smooth or shiny	-	-	1	-	-	1
Hardening of skin	1	-	1	-	-	2
Thickening of skin	2	-	2	-	1	5
Ulcers of skin	-	-	-	-	-	-
Fingernails changes	-	1	1	-	-	2
Tingling fingers	3	5	2	2	2	14
Nodules (hands or wrists)	2	-	1	-	-	3
Redness of hands	-	1	1	-	-	2
Numbness of hands	3	6	3	-	4	16
Immobility of hands	3	2	2	-	-	7
Deformity of hands	2	-	1	-	2	5
Osteolysis	3	5	2	2	-	12
<u>Acroosteolysis</u>	2	5	2	2	-	11
Arthritis	-	-	-	-	-	-
Fracture	-	1	2	-	1	4
Amputation	-	-	-	-	1	1
Kienböck lesions	1	-	-	-	-	1
Cervical ribs	-	-	1	-	-	1
Densification	-	-	-	1	-	1
Geodes	1	-	-	-	1	2

CHRONOLOGICAL DISTRIBUTION OF THE CASES

Plants	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	CASES
JENEPE																		W
TAVVAUX																		P
																		D
																		EJ
																		SR
																		PJ
																		GM
																		LJ
TORRELMINGA																		JLQ
																		FSI
TERRAILL																		SG
																		ZB

- [Starting of job
- [Onset of symptoms
- * Acrostleolysis
- o Bone recovery
- Sickness