

control group. LDH in incubation fluid and hemolytic rate were higher than control group.

Autopsy study: The human pathological study was done in 2 cases of aluminum oxide pneumoconiosis and 3 cases of ferrum oxide pneumoconiosis. The histopathological feature is dust macular type.

Etiological dust identified: aluminum oxide, Al, Fe, Mn and so on were identified in the lung tissue by Atomic absorption spectrophotometer, EDXA, X-ray diffraction, the metal dust in lung tissue of workers exposed to those metal dusts were higher than that of unexposed (for example, ferrum oxide increased 10~100 fold). The content of quartz dust was somewhat similar to that of unexposed workers and lower than that of patients with silicosis or silicatosis. Besides γ -aluminum oxide

dust has the fibrogenic effect, the α -aluminum oxide dust (for example, brown corundum) also has mild fibrogenic effect in aluminium oxided pneumoconiosis; ferrum oxide and Mn found in lung tissue of ferrum oxide pneumoconiosis, tungsten carbide takes effect in combination with cobalt in hard metal pneumoconiosis, the effect of quartz have not been proven in all cases.

The new notions about the fibrogenic effect of these three metallic dusts were the first report in the literature. It has to break through in the level of understanding of the metallic pneumoconioses and it will certainly enlighten deeply study on fibrogenic effect of metallic dusts, and could provide more useful information for setting up the hygienic standards and diagnostic criteria of pneumoconioses.

硅酸钠蒸气灼伤致死 1 例报告

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硅酸钠属低毒类化合物, 呈弱碱性, 很少引起急性中毒, 而引起肺泡性肺水肿、气胸、纵膈气肿及皮下气肿, 最后致死者为罕见, 现报告 1 例。

患者, 男, 18岁, 住院号9609。1987年12月3日晚10时于工作中因意外事故, 硅酸钠蒸气大量逸出, 造成呼吸道、头面部、颈部、前胸、后背及四肢灼伤。16小时后转入我院。

体检: $T 35.5^{\circ}\text{C}$, 脉搏扪不清, 但股动脉可扪及微弱搏动, $P 140$ 次/分, $R 34$ 次/分, BP 测不清。烦躁不安, 意识不清。中度呼吸困难。面部肿胀青紫。双鼻腔及口腔粘膜均有较重灼伤, 并有部分粘膜坏死、剥脱。颈前部及双腋下确诊有握雪感。头面部、颈部、前胸、后背及四肢均有Ⅱ°灼伤, 总面积29.1%。

听诊双肺底可闻及细小水泡音。心音不清。心电图示窦性心动过速, 136次/分。

实验室检查: 白细胞 $12.6 \times 10^9/\text{L}$, 中性分叶0.83, 淋巴0.14, 单核0.03, 血色素120g/L, CO_2 结合力16.1mmol/L。

X线检查: 右肺中下野内中带可见密度很低类似于磨玻璃样的均匀、边缘模糊不清的大片状阴影。左肺外带可见气胸线, 肺组织被压缩约为10%。左肺中

上野亦可见密度低而均匀的大片状阴影。左肺底可见一 $11\text{cm} \times 4.7\text{cm}$ 的肺大泡。双侧纵膈、颈部及两腋部均可见少量气体。肋骨无骨折等异常改变。

X线诊断: 1. 双肺肺泡性肺水肿; 2. 左气胸合并纵膈及皮下气肿; 3. 左肺肺大泡。

该患入院后, 立即进行吸氧, 抗休克等治疗, 但因病情笃重, 最后出现呼吸、循环衰竭而死亡。

讨论: 硅酸钠属低毒类化合物, 呈弱碱性。以往认为, 几乎不溶于水, 皮肤接触可发生皮炎。只有大量误服才能使消化道产生机械性损伤或轻度碱性灼伤。但后藤 稠等认为, 硅酸钠可溶于水, 有急性局部作用, 对皮肤和粘膜有刺激和腐蚀性作用。此例患者由于吸入了大量硅酸钠蒸气, 使呼吸道粘膜产生较广泛损伤, 出现肿胀和坏死, 造成呼吸困难和机体缺氧。缺氧可使毛细血管痉挛, 增加肺毛细血管压力, 从而导致血浆外渗, 出现肺泡性肺水肿。另外, 硅酸钠蒸气的毒性作用, 使之肺泡壁和肺毛细血管的通透性增加, 也是肺气肿形成的重要原因。

曾有报道, 氨气、氮氧化合物中毒者, 有的出现气胸、纵膈气肿和皮下气肿。而硅酸钠蒸气吸入灼伤也可造成肺大泡、气胸、纵膈气肿及皮下气肿。