

## 4 CASE HISTORIES OF YUSHO VICTIMS 45 YEARS AFTER THE ACCIDENT (TWO SIX YEARS OLD GIRLS, ONE FETUS, ONE STILL OVUM IN 1968)

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### Introduction

Toxic effects of PCDFs and PCBs for humans had been thought to be only dermal toxicity for long time. In 1968 when the Kanemi rice oil had found to be toxicated,14000 people went health centers near their residential area and complained of injestion of toxic oil. But only less than 1800 people designated as toxicosis “Yusho victim”.

At first Yusho victims were limited to the onset of chloracne<sup>1</sup>.Although family members sit around the table and took the same dishes cooked with toxic oil, one who had not the onset of chloracne was not approved as a Yusho victim. In 2012 the government decided to admit as a( newly admitted)Yusho victim (at his or her request)with whom a (past admitted )Yusho was living at that time.But those who were then in gestational age and descendants of Yusho victims were not admitted as official Yusho victims.

But it is necessary to give full consideration of the influence of PCDFs and PCBs on the people who were then children and future children. We should make our study which takes our future children into account.

There had been no official inquiry about the status of Yusho victims.In 2008 an official investigation<sup>2</sup>about the Yusho victims was carried out for the first time by the Ministry of Health, Labor and Welfare of Japan. The inquiries asked about the health and well-being of Yusho victims.The inquiries were mailed to Yusho.victims.

This investigation was limited to officially admitted Yusho victims. 1,131 Yusho victims filled the questionnaire. In 2010 the results<sup>3</sup> of study were announced.Comparison of this results with those from comprehensive survey of living conditions of the people on health and welfare showed more than 1.5times predominance of diseases<sup>4</sup> such as manic-depressive psychosis,schizophrenia,and hallucination, easily offended, anxiety neurosis, vertigo, acroesthesia of teeth,nasal hemorrhage,autonomic inbalance,orthostatic hypotension, and so on.

These are newly recognized disorders.Long time effects and age-specific toxic effects are not clinically apparent still now. Clinical evaluation should begin with a complete history of his or hers.

### Materials and Methods

We made 4 case reports of Yusho children’s life history after the onset of Yusho (food- poisoning). When they had their second generations, we examined the conditions of them. We had interviewed for long time in every case, and refered maternal records and other clinical records if necessary and possible . If it was then infantile or a fetus or even an ovum, the hearing from their mother was important and necessary.

### Results and Discussions

#### Case1

She was born in 1961. All the members except her younger brother, who was then a fetus and born in 1968, had eaten the toxic oil with deep-fried fishes ,vegetables and stir-fry vegetables. The oil, being heated, billowed out white smoke. She had eaten toxic oil when she was 6 and 7 years old. Postal syncope was noticeable at 9 years of age. At the morning assembly of school she often collapsed on the spot and nursing teacher brought her to the aid station. General fatigue, headache and neuralgia were also noticeable. Menarche was at 13 years of age. Menstrual periods were rather short 22 or 23days cycle but regular. Severe chloracne on her face and body appeared from 12 yeras old to15 years old. Pus was oozing from inflammation of chlor acne,her body smelled bad. She was approved as Yusho victim at13 years old after examination (in 1970). Large amount of nasal hemorrhage occurred frequently. Nausea and vomitting also occurred late18 years old,and she could not keep food down. This continued over her 20 years old.

After high school she obtained a job in the central part of the island of Honshu, Japan. But after 2 years and 6 months she was admitted to hospital because of sevre depression. She suffered from insomnia.After 6 months she

came back Kyushu. She entered hospital and convalesced at home, this was repeated several times. She married at 25 years old (in 1986). She saw doctor regularly but there was no noticeable change in her condition, so she stopped out patient treatment. She began cognitive-behavioral therapy by herself. This therapy brought relief to some extent for her mental disorder.

She experienced spontaneous abortion. After that she gave birth a baby girl in 1989. And she gave a baby boy in 1998. So many abnormalities were observed, concerned with her pregnancy and delivery. These abnormalities were seen in Yusho victims of the same generation. We will report these in another article.

Now she is in her menopause, sometimes she can not control her emotion. She suffers from insomnia alike in her twenties, occasional macular subcutaneous hemorrhage and she has felt herself as if she had carried a heavy iron plate on her back. She always feels general fatigue.

Her daughter's case (case 1)

She was born in 1998. A tooth erupted at birth. Pigmentation were observed under the eyes. When she was in 33th days chlor acne like eczema was observed all over the skin especially on her face. She had a poor complexion and always felt exhausted. She had often had nasal hemorrhage since childhood. She had skin lesions like chlor acne on her cheeks and left brachium, they smelled bad and appeared over and over since her 19 years old. She had been often disturbed her work with general fatigue. She was born long after (20 years later) the accident but she is a probable Yusho patient.

Her (case 1) sons' case

Her son was born in 1998. He had suffered from atopic dermatitis since 7 months' old. There was no right permanent cranial tooth. He also had suffered from asthma. His response had been always slow. He had been attention deficit disorder. His attention span had been so short. He said "My attention-duration time is so short, that in my class I can concentrate only ten minutes and after that I can not understand school lesson." He had been learning disability. This is a case study but we note this is not a special case. In our study more children born from mothers who were expose to toxic oils as children were attention deficit disorder to some extent.

case 2. She was designated as Yusho child at age 7. In those days, when she got up, her face was always edematous, she had discharge from the eyes. She suffered from intractable meibomian sties. She had always felt chronic general fatigue and had been inattentive at school lessons. She suffered from fever of unknown origin.

She also had been suffered from vaginal discharge. From 13 years old she suffered pain and stiffness of neck and shoulder. She had also stiffened and distended muscle with pricking. Then the pain changed severe headache. In her student life she could not concentrate in her study because she was often interrupted by severe headache. After she had graduated from college she became a teacher. She was forced to resign from her job for her unhealthy condition (chronic fatigue, severe headache etc). She got married at the age 29, she was diagnosed both side ovarian tumors and obstruction of left oviduct. She experienced infertility. With use of CAM ovarian tumors had disappeared. (CAM is the abbreviation for Complementary and Alternative Medicine.) She became pregnant after this. She suffered from threatened abortion and threatened premature labor. At her delivery she suffered weak uterine contraction, arrest of active phase dystocia. Her convalescence after giving birth was not going well (incurable hematoma). Her second pregnancy was alike the first pregnancy. Her current symptoms are numbness (feeling of asthenia that become worse suddenly), head ache, stiff neck and chronic fatigue. CAM use is inevitable for her health.

Her (case 2) daughters' case

They are both female. They could not concentrate themselves on the school lessons. They could not keep up in the school lessons. They were slow to understand things. The younger sister complained general fatigue and asthma attack. She always had vaginal discharge. The elder sister had purpura at the lower half of her body. After menarche she felt so stiffened and distended muscle at the mamma and heels with pricking pain.

These children were all born after Yusho trouble, but they may be affected by their mother (Yusho victim) through placenta, or breast milk.

Her (case 2) sister's and her brothers' case

The elder sister was 11 years old when she had eaten toxic oil. The elder sister remains unmarried, because she saw many black babies born from yusho women. She worried about to have a black baby and would not get married. Her (case 2) oldest brother was 13 years old in 1968. He had many acne scars (chlor acne scars). In his schooldays, he could not concentrate on his study and to concentrate on study he poured cold water over himself even in winter. He had married and have three children. Now he has returned to a single status. Her second

oldest brother was 8 years old in 1968. He is unmarried, from his sister's point of view, he seems to have had no sexual appetite.

Her (case2) father's contribution to the health of his family was very important.

In 1971 his wife got a high temperature and shivered with fever. Her liver was full of pus and stones, the outlet of gallbladder covered with stones, and the jaundice was caused by this. After some medical treatment the attending physician said there was no remedy and no surgical treatment. He was taught by his relative some of folk remedy i.e. CAM (to drink green vegetable juice, therapy using a vacuum cupping glass, drink urine therapy, fasting therapy etc). He decided to adopt green vegetable juice therapy, during her being in the hospital. After 10 days her jaundice had disappeared. She left the hospital of her own free will. He treated her with drinking green vegetable juice method and therapy using a vacuum cupping glass. After she left the hospital, she had not tried folk remedy as hard as possible. Now in 2010 she complained pain and general fatigue, but no fever and no jaundice.

He had tried so many folk remedy intermittently by himself. In 2004 Yusho victims were measured blood PCDFs when they come for their year's health check-up. His PCDFs blood level was as low as general people, whereas her blood level of PCDFs was 540 pg/g lipids still in 2004, it was so high.

Fresh green vegetable juice contains so much enzyme and chlorophyll. Chlorophyll is both hydrophilic and hydrophobic, it can take dioxins and PCBs from adipose tissue and discharge them from the body. Fresh green vegetable juice also contains antioxidants such as ascorbic acid, play a role in scavenging free radicals. These play an important part of detoxication, and may be helpful for another yusho patients.

Case3 Case4

Case 3 and case4 are members of a family. We asked their mother for the growing process of her children.

Case3) She was born in October 1968. Her mother did not know the news that the toxic rice oil sold by Kanemi had caused strange symptoms of atypical acne. Her mother ate this toxic oil since 1966 spring to 1968 autumn.

Her mother went a doctor for the first time when she was 26 weeks gestation. After then the course of her pregnancy was smooth. On 41 weeks labor pain had begun and 30 minutes later membrane rupture occurred, but then the labor had arrested and her mother delivered her with forceps. According to the maternal record her weight was 3200 gr at birth, height 51cm. She was dark brown hyperpigmentation skin in general, near nails of digits, and near her upper and lower lip (so called black baby). So much vernix caseosa on her forehead, eye brows and head. Her hair was indescribably greasy and gleaming. She had a strawberry birthmark on her right shoulder. Her tonsils were swollen, and she had often run a high fever from her baby age to 5 years old. She had vaginal pus like discharge. She was so nervous and she used to be crying at the top of her lungs (from 2 to 5 years old). She suffered allergic conjunctivitis and allergic rhinitis. Headache began since primary school. Many deciduous teeth were not absorbed so that tooth extraction was needed several times. She suffered spinal curvature and scoliotic pelvis.

She suffers from cervical discopathy. She has suffered from diarrhea from childhood till now. She had autonomic imbalance, she felt vertigo, anxiety disorder, and she was easily offended. She was short stature till 14 years old and her menarche was 15 years old. Her menstruation was anovular, so she had been sterile. She has a bicornate uterus. She needed long time medical treatment to bear a child. After the therapy of infertility she was delivered of two babies, a boy and a girl.

Case4) He was born in Sept, 1970. According to his maternity record book, birth weight 2950g, birth height 54cm. His mother during this pregnancy did not gain her weight well. She went to doctor for the first time at her 31 week gestation because she did not notice of her pregnancy because she had been oligomenorrhea (three times a year) since her first delivery. The weight of expectant mother had no weight gain from 31 weeks to 34 weeks of her gestation, and after that (34 weeks to 38 weeks) she had only 2.5 kg weight gain. He was breast-fed to 3 months of age, no difficulty of suckling. Day 36th eczema appeared.

His mother noticed, he had undescended testis, short and distorted penis. He had a lipomatous tumor on his armpit. He had a strawberry birthmark under his navel. He was fair skinned when he was born, but skin pigmentation appeared gradually. He used to walk in his sleep till 5 years old. His tonsils were swollen and he often ran a high fever to 5 years old. When he caught cold, he was seized by a fit of coughing and vomited out, this continued till his 2nd year of middle school. He became greasy face. He suffered allergic conjunctivitis and allergic rhinitis since secondary school days. When he stood up he felt faint, this began in his high school days. He suffers from diarrhea till now. He was operated a plastic surgery on his penis at 19 years old.

He suffers from low-tension glaucoma since 2000 (30 years old). hepatic insufficiency, hyperlipemia, high uric acid.

Intercostal neuralgia, gallbladder polyp, prostatitis syndrome, suspected renal calcification. He has myopia he needs glasses with thick lenses. He suffers from cervical discopathy since 2005 (35 years old)

He married in 2000 (30 years old) with a healthy woman. His wife gave birth to a baby boy in 2002, he had a black birth mark on his shoulder, not Mongolian spot that is seen generally on the buttocks of Japanese baby.

Her wife gave birth a baby girl in 2003 who had a lipomatous tumor near her ear.

He went to try the examination for Yusho victims to measure PCDFs, PCQ and dioxin like PCBs in 2002, 2003, and 2005. The value was low so he can't be approved as Yusho victim.

His umbilical cord had been reserved, and was measured the concentration of dioxin like PCBs of his umbilical cord. The total concentration was 11000 pg/g and concentrations of isomers of dioxin like PCBs were higher than healthy babies<sup>5</sup>. The concentrations of his umbilical cord is generally higher than that of his elder sister's. We can deduce from these data that during this pregnancy the mother did not gain normally, so dioxin like PCBs in her adipose tissue was mobilized and with blood stream they reached the fetal tissue through the umbilical cord.

As in the past report toxic effects confirmed in humans are relatively limited. But now we may suggest modification to the idea. A classical hall-mark effect of toxic effect of dioxins for humans has been chloracne, but now the skin lesions historically called chloracne are known to represent a functional hamatomaous<sup>6</sup> adaptive process to excrete PCDFs and PCBs. After 30 years of the accident Yusho study group measured blood concentrations of PCDFs and PCQ of Yusho victims and suspected Yusho victims. Some people who had not experienced severe chloracne showed high concentrations, whereas some victims who had experienced severe chloracne showed low concentrations of PCDFs and PCQ. The damages of PCDFs and PCBs to these people could be quite different. It was reported similar cases of the experience from the Seveso<sup>7</sup> accident. We should comment that half life<sup>8</sup> of blood concentration of PCDFs and dioxin like PCBs depend strongly on the lifestyle of people. We have a tendency to see superficial phenomena such as skin lesions and measured value, and neglect unknown effects such as mental disorder and reproductive disorder as we have seen in these presented cases.

Toxic effects for humans may be different in their life stage and sex. The toxic effects may appear in years to come. It is necessary to observe Yusho victims to the end of their lives. This is a report of Yusho children, a future Yusho child and his or her descendants. More cases are needed to characterize the toxicity of these toxicant.

Forty five years have passed since the outbreak of Yusho, few reports are known about long term follow up of Yusho children including "black baby" "The study of Yusho children is difficult but very important because they were in the process of mental and physical developments. the polluted rice oil effects may appear after their puberty, gestation, confinement, climacterium, post-climacterium and even in old age.

Another difficulty for the study of Yusho children comes from a biased view of people; "Yusho woman may bear a black baby." In some cases Yusho woman was rejected to marry, or was divorced by her husband. Some Yusho women married without telling her husband that she was a Yusho. Yusho mother would not tell others their child to be a Yusho. In spite of their illness many Yusho children are reluctant to check up their health status with medical examination held by Yusho study group, partly because there is no cure for the disease they suffer, and partly because of the biased view of people.

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